CDP-997

SERVICE MANUAL

US Model
AEP Model

Model Name Using Similar Mechanism	CDP-597
CD Mechanism Type	CDM14-5BD8A
Optical Pick-Up Block Type	BU-5BD8A

SPECIFICATIONS

Compact disc player

Frequency response	2 Hz – 20 kHz ±0.3 dB
Signal to noise ratio	More than 115 dB
Dynamic range	More than 100 dB
Harmonic distortion	Less than 0.0025%
Channel separation	More than 110 dB

Outputs

LINE OUT (FIXED)	Output level 2 V (at 50 kilohms, non DSP mode)
(phone jacks)	Load impedance over 10 kilohms
LINE OUT (VARIABLE) (phone jacks)	Output level max. 2 V (at 50 kilohms, non DSP mode) Load impedance over 50 kilohms
DIGITAL OUTPUT (OPTICAL) (optical output connector)	Wave length 660 nm Output level −18 dBm
HEADPHONES (stereo phone jack)	Output level max. 28 mW Load impedance 32 ohms

General

Power requirements	120 V AC, 60 Hz
Power consumption	17 W
Dimensions	Approx. 430×110×355 mm (w/h/d) ($17\times4^{3}/_{8}\times14$ inches) Including projecting parts and controls
Weight	Approx. 4.6 kg (9 lbs 15 oz)

Remote commander (RM-D997)

Remote control system	Infrared control
Power requirements	3 V DC with two batteries size AA (IEC designation R6)
Dimensions	Approx. 62×18×175 mm (w/h/d) ($2^{1}/_{2}\times^{23}/_{32}\times7$ inches)
Weight	135 g (4.6 oz) Including batteries

Supplied accessories

Connecting cord (1)
(2 phono plugs ↔ 2 phono plugs)
Remote commander (1)
Sony SUM-3(NS) batteries (2)

— Continued on next page —

MICROFILM

COMPACT DISC PLAYER
SONY®

Optional accessory
Audio optical connecting cord POC-15

Design and specifications are subject to change without notice.

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WARNING !!

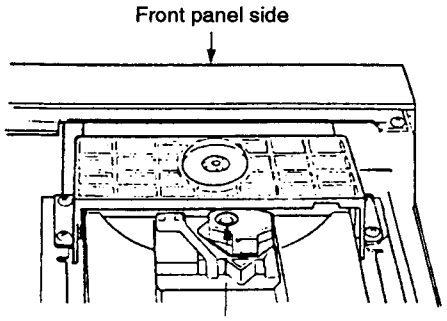
AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

[CHECKING METHODS OF LASER DIODE AND FOCUS SEARCH OPERATIONS]

- Turn the power switch ON with the condition of the disc table closed without disc. And then watch the objective lens to check whether the operation can be performed or not, as the below figure shows.



- The laser beams diffused can be observed.
- The up and down movements of the objective lens (Twice)

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30cm away from the objective lens.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

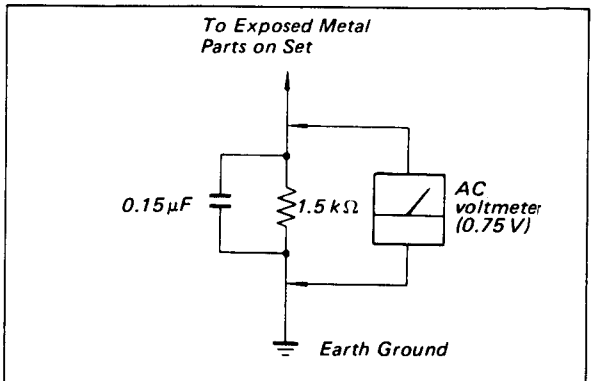


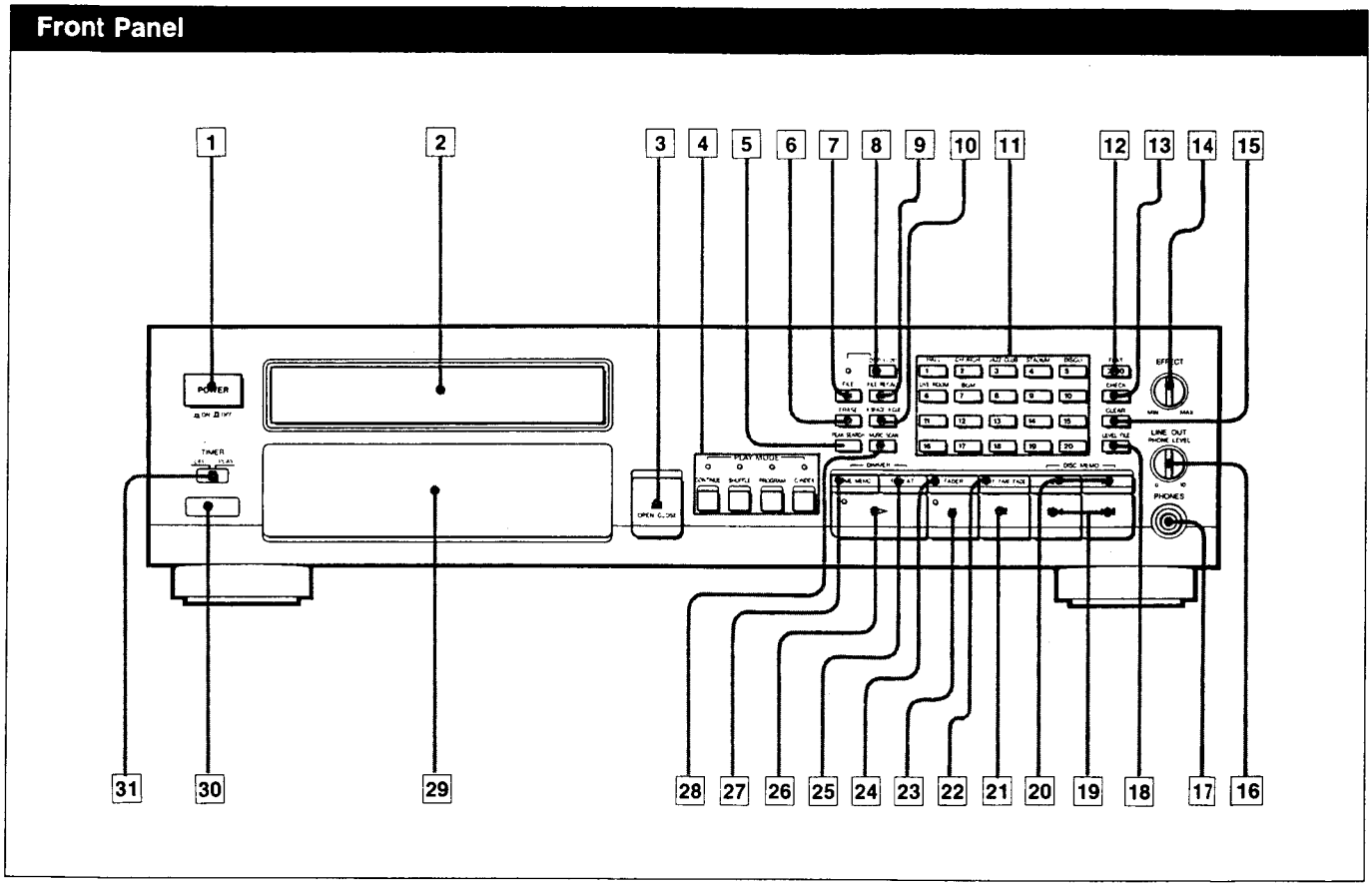
Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1
GENERAL

This section is extracted from instruction manual.

1-1. IDENTIFYING THE PARTS

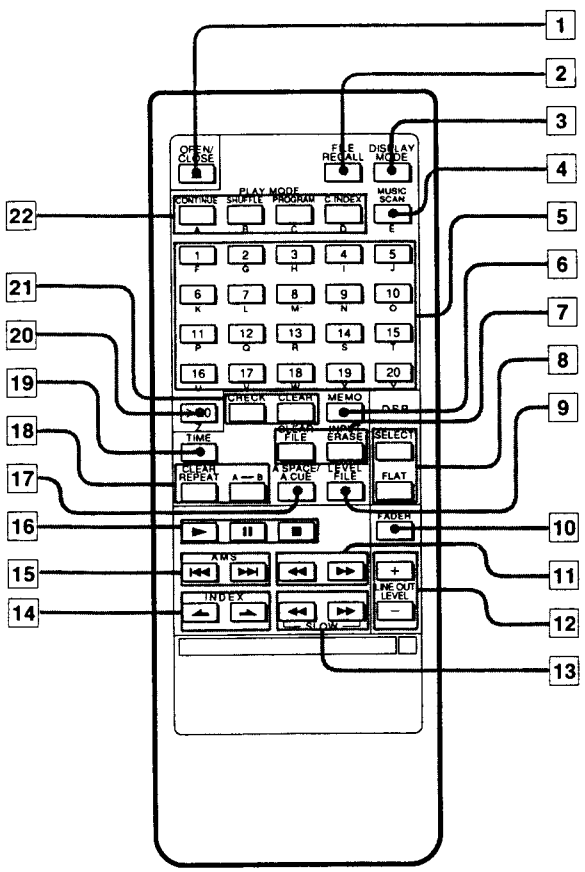
Front Panel



1 POWER switch
2 Disc tray
3 ⏏ OPEN/CLOSE button
4 PLAY MODE buttons
CONTINUE button and indicator
SHUFFLE button and indicator
PROGRAM button and indicator
C. (custom) INDEX button and indicator
5 PEAK SEARCH button
6 ERASE (memory erase) button
7 FILE (custom file) button
8 DSP/1-20 button and indicator
9 FILE RECALL button
10 A.SPACE/A.CUE button
11 Numeric buttons/DSP SELECT button
12 >20 (over 20)/FLAT button
13 CHECK (program check) button
14 EFFECT level
15 CLEAR (program clear) button
16 LINE OUT/PHONE LEVEL control
17 PHONES jack
18 LEVEL FILE button
19 ⏮ ⏭ AMS* buttons
20 ◀◀ ▶▶ (manual search) DISC MEMO buttons
21 ■ (stop) button
22 EDIT/TIME FADE button
23 ❚❚ (pause) button and indicator
24 FADER (fade in/fade out) button
25 REPEAT button
26 ▶ (play) button and indicator
27 TIME/MEMO button
28 MUSIC SCAN button
29 Display window
30 Remote sensor
31 TIMER switch

* AMS is the abbreviation of Automatic Music Sensor.

Remote Commander

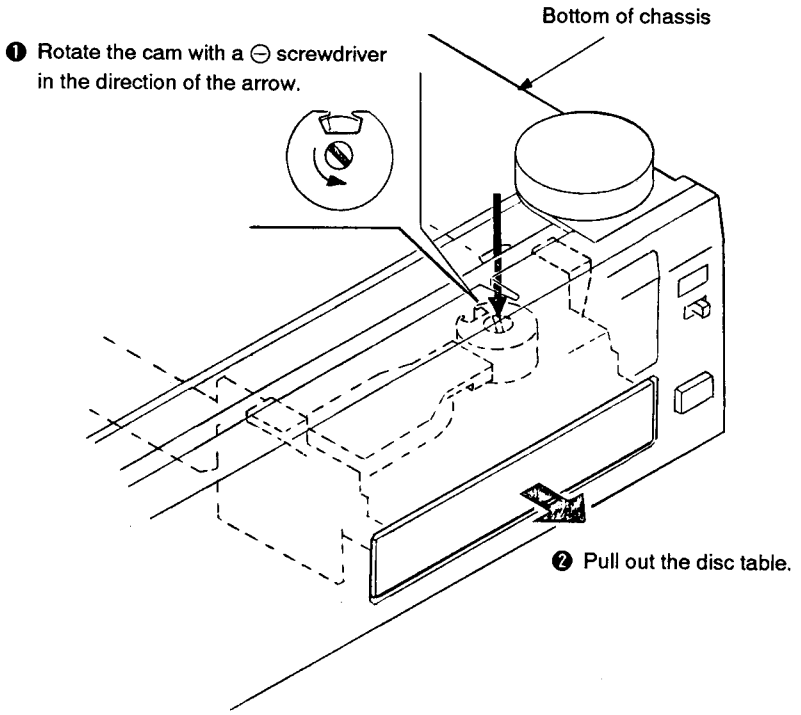


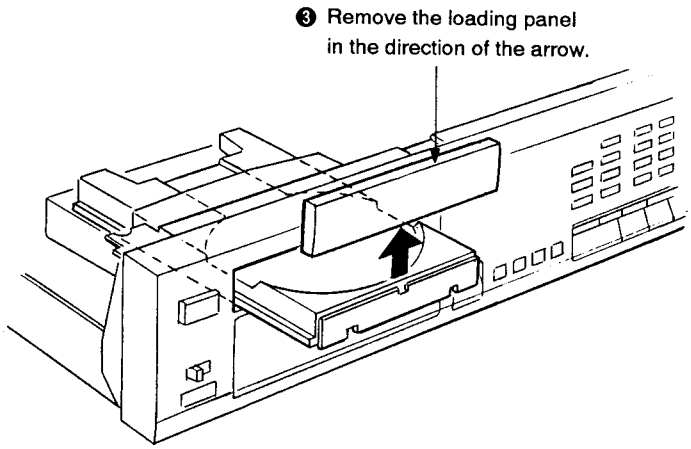
1 ⏏ OPEN/CLOSE button
2 FILE RECALL button
3 DISPLAY MODE button
4 MUSIC SCAN button
5 Numeric buttons
6 MEMO INPUT button
7 FILE (custom file) button
ERASE button
8 DSP SELECT button
DSP FLAT button
9 LEVEL FILE button
10 FADER (fade in/fade out) button
11 ◀◀ ▶▶ (manual search) buttons
12 LINE OUT LEVEL (line out/headphone level) buttons
13 ◀◀ ▶▶ SLOW (low speed manual search) buttons
14 ⬅ ➡ INDEX buttons
15 ⏮ ⏭ AMS buttons
16 ■ (stop) button
❚❚ (pause) button
▶ (play) button
17 A. SPACE (auto space)/A. CUE (auto cue) button
18 REPEAT button (repeat/A ↔ B repeat clear) button
19 TIME button
20 >20 (over 20) button
21 CLEAR button
CHECK button
22 PLAY MODE buttons
CONTINUE button
SHUFFLE button
PROGRAM button
C (custom). INDEX button

Buttons with orange letters (A, B, C, ...) are for entering a disc memo (page 26).

SECTION 2
DISASSEMBLY

- In order to remove the front panel block when the power supply does not turn on, rotate the cam with minus screw-driver as the figure shows, and the loading part will be moved.
  Then pull out the loading part by your hand to remove the loading panel as the figure shows. After that take out the front panel block.





SECTION 3
IC PIN FUNCTIONS

- **IC342 (CXD2561M-1)**

Pin No.	Symbol	I/O	Description
1	DVDD	–	Digital power supply
2	TEST	I	Test pin Normally fixed to "L"
3	INIT	I	Re-synchronizes at rising edge of this signal.
4	LRCKI	I	LRCK input
5	DATAR	I	Rch data input
6	DATAL	I	Lch data input
7	BCKI	I	BCK input
8	DVss	–	Digital GND
9	512Fs	O	512 Fs output
10	XVss	–	Clock GND
11	XIN	I	Crystal oscillation input pin (512 Fs)
12	XOUT	O	Crystal oscillation output pin (22.5 MHz)
13	XVDD	–	Clock power supply
14	VSUB	–	Substrait Connected to GND
15	AVDDR	–	Analog power supply
16	R1 (+)	O	Rch PLM output 1 (in-phase)
17	AVSSR	–	Analog GND
18	R1 (–)	O	Rch PLM output 1 (antiphase)
19	R2 (+)	O	Rch PLM output 2 (in-phase)
20	R2 (–)	O	Rch PLM output 2 (antiphase)
21	AVDD	–	Analog power supply
22	AVSS	–	Analog GND
23	L2 (–)	O	Lch PLM output 2 (antiphase)
24	L2 (+)	O	Lch PLM output 2 (in-phase)
25	L1 (–)	O	Lch PLM output 1 (antiphase)
26	AVSSL	–	Analog GND
27	L1 (+)	O	Lch PLM output 1 (in-phase)
28	AVDDL	–	Analog power supply

- **IC341 (CXD2560M)**

Pin No.	Symbol	I/O	Description
1	Vss	–	Power supply pin (GND)
2	SYSM	I	System mute input "H": active
3	ATT	I	CTL "L": ATT data input CTL "H": EMP input
4	SHIFT	I	CTL "L": shift clock input CTL "H": FS32 input
5	LATCH	I	CTL "L": latch clock input CTL "H": FS48 input
6	CTL	I	Pull-down within IC "H": direct input mode. "L": serial transfer mode.
7	INIT	I	Re-synchronizes at rising edge of this signal.
8	BCKI	I	BCK input
9	DATAI	I	Data input
10	LRCKI	I	LRCK input
11	TEST	I	Test pin Normally fixed to "L"
12	Vss	–	Power supply pin (GND)
13	128Fs	O	128 Fs clock output
14	INVI	I	Inverter input
15	INVO	O	Inverter output
16	INVO2	O	Inverter output
17	MCLK	I	Master clock input (f=512 Fs)
18	VDD	–	Power supply pin (+5V)
19	BCKO	O	BCK output
20	DL	O	Lch data output
21	DR	O	Rch data output
22	LRCKO	O	LRCK output
23	FLGL	O	Lch ϕ mute flag output
24	FLGR	O	Rch ϕ mute flag output

- **IC901 (CXD2701Q)**

Pin No.	Symbol	I/O	Description
1	IMODE	I	Input data format setting pin. Data position is changed according to "H" and "L".
2	IDIR	I	Input data format setting pin. "H": MSB first, "L": LSB first
3	DATAI	I	Serial data input pin of 1 sampling 2 channels. Data format: two's complement
4	BCLKI	I	Serial bit clock input pin of serial input data
5	LRCKI	I	Sampling frequency clock input pin of serial I/O. Transfers Lch data at "H" and Rch data at "L".
6	VSS1	–	GND pin
7	DATAO	O	Serial data output pin. Data format: two's complement.
8	BCKO	O	Bit clock output pin. 64-slot.
9	LRCKO	O	Sampling frequency clock output pin of serial data
10	BS1	I	Output data bit number setting pin BS2=H, BS1=H 24-bit BS2=H, BS1=L 20-bit BS2=L, BS1=H 18-bit BS2=L, BS1=L 16-bit
11	BS2	I	
12	ODIR	I	Output data format setting pin. "H": MSB first, "L": LSB first
13	VSS3	–	GND pin
14	SCK	O	System clock output pin. fsck=fxt=512 fs
15	XOUT	O	Output pin of crystal oscillation circuit
16	XIN	I	Input pin of crystal oscillation circuit. fxt=512 fs
17	VDD1	–	+5V power pin
18	I/O4	I/O	External DRAM data input/output I/O4
19	I/O3	I/O	External DRAM data input/output I/O3
20	CAS	O	External DRAM column address strobe output pin
21	I/O2	I/O	External DRAM data input/output I/O2
22	I/O1	I/O	External DRAM data input/output I/O1
23	WE	O	External DRAM write enable output pin. "L": active
24	A0	O	External DRAM address output A0
25	RAS	O	External DRAM low address strobe output pin
26	A1	O	External DRAM address output A1
27	A2	O	External DRAM address output A2
28	VSS2	–	GND pin
29	A3	O	External DRAM address output A3
30	A4	O	External DRAM address output A4
31	A5	O	External DRAM address output A5
32	A6	O	External DRAM address output A6
33	A7	O	External DRAM address output A7
34	A8	O	External DRAM address output A8
35	TEST1	I	Test pin. Normally fixed to GND.
36	TEST2	I	Test pin. Normally fixed to GND.
37	TEST3	I	Test pin. Normally fixed to GND.
38	TEST0	O	Test pin
39	VDD2	–	+5V power pin
40	PRGD	I	Serial data input pin where commands, coefficient, and controls, etc. are transferred from microprocessor.
41	PRGCK	I	PRGD serial clock input pin. Data is fetched at rising edge.
42	PRGL	I	Latch input pin to latch the serial data within IC from microprocessor. "L": active.
43	INIT	I	Initialization pin. "L": active.. Re-synchronizes at rising.
44	OVF	O	Outputs 5-bit overflow flag of DSP, Lch MIX, Rch MIX, Lch EQ, and Rch EQ.

- **IC301 (M38063M6)**

Pin No.	Symbol	I/O	Description
1	DSPVOL	I	DSP effect level input
2	VLEVEL	I	Volume level input
3	VOLLED	O	Volume LED
4	VOLDWN	O	Remote control volume down output
5	VOLUP	O	Remote control volume up output
6	LODOUT	O	Loading-out output
7	LODIN	O	Loading-in output
8	PRGL	O	IC901 (CXD2701) data latch pulse output
9	PRGCK	O	IC901 (CXD2701) data clock output
10	PRGD	O	IC901 (CXD2701) data output
11	NC	–	No connection
12	GAIN3	O	Analog gain control 3
13	GAIN2	O	Analog gain control 2
14	GAIN1	O	Analog gain control 1
15	CNIN	I	Track jump number count signal input
16	LDON	O	Laser diode ON/OFF output
17	FOK	I	FOK monitor input
18	GFS	I	GFS monitor input
19	SENSE	I	SENSE input of IC331 (CXD2500) and IC101 (CXD2501)
20	NC	–	No connection
21	SQCK	O	Subcode read out clock output
22	NC	–	No connection
23	SUBQ	I	Subcode data input
24	SCOR	I	SCOR input
25	NC	–	No connection
26	CNVSS	–	GND
27	XRST	I	Reset input
28	ADJ	I	Test mode pin
29	AFADJ	I	Test mode pin for electrical adjustment
30	XIN	–	Clock input
31	XOUT	–	Clock output
32	GND	–	GND
33	D7	I/O	64K-SRAM data input/output 7
34	D6	I/O	64K-SRAM data input/output 6
35	D5	I/O	64K-SRAM data input/output 5
36	D4	I/O	64K-SRAM data input/output 4
37	D3	I/O	64K-SRAM data input/output 3
38	D2	I/O	64K-SRAM data input/output 2
39	D1	I/O	64K-SRAM data input/output 1
40	D0	I/O	64K-SRAM data input/output 0

Pin No.	Symbol	I/O	Description
41	NC	–	No connection
42	NC	–	No connection
43	WE	O	64K-SRAM write enable output
44	A12	O	64K-SRAM address 12
45	A11	O	64K-SRAM address 11
46	A10	O	64K-SRAM address 10
47	A9	O	64K-SRAM address 9
48	A8	O	64K-SRAM address 8
49	A7	O	64K-SRAM address 7
50	A6	O	64K-SRAM address 6
51	A5	O	64K-SRAM address 5
52	A4	O	64K-SRAM address 4
53	A3	O	64K-SRAM address 3
54	A2	O	64K-SRAM address 2
55	A1	O	64K-SRAM address 1
56	A0	O	64K-SRAM address 0
57	QINT	O	Command output pulse
58	M/F	I/O	Master/file command select input/output
59	SACK	O	Command acknowledge output
60	MREQ	I	Command request input
61	CMD3	I/O	Master microprocessor interface 3
62	CMD2	I/O	Master microprocessor interface 2
63	CMD1	I/O	Master microprocessor interface 1
64	CMD0	I/O	Master microprocessor interface 0
65	XLT	O	Data latch pulse output of IC331 (CXD2500) and IC101 (CXD2501)
66	CLK	O	Data clock output of IC331 (CXD2500) and IC101 (CXD2501)
67	DATA	O	Data output of IC331 (CXD2500) and IC101 (CXD2501)
68	SCLK	O	Coefficient data read out clock output of IC101 (CXD2501)
69	DIRC	O	Direct control pin (not used) of IC101 (CXD2501)
70	ATT	O	Attenuation data output of IC341 (CXD2560)
71	SHIFT	O	Attenuation data clock output of IC341 (CXD2560)
72	LATCH	O	Attenuation data latch pulse output of IC341 (CXD2560)
73	Vcc	–	+5V
74	VREF	–	+5V
75	AVss	–	GND
76	AMUTE	O	Audio mute output
77	MUTE	O	Digital mute output
78	NC	–	No connection
79	INSW	I	Loading in-switch input
80	OUTSW	I	Loading out-switch input

• **IC331 (CXD2500AQ)**

Pin No.	Symbol	I/O	Description
1	FOK	I	Focus OK input pin. Used for SENS output and servo auto sequencer.
2	FSW	O	Spindle motor output filter select output
3	MON	O	Spindle motor ON/OFF control output
4	MDP	O	Spindle motor servo control
5	MDS	O	Spindle motor servo control
6	LOCK	O	GFS is sampled at 460 Hz. "H" output: when GFS "H". "L" output: when continuously "L" eight times.
7	NC	–	
8	VCOO	O	Analog EFM PLL oscillation circuit output
9	VCOI	I	Analog EFM PLL oscillation circuit input. fLOCK=8.6436 MHz
10	TEST	I	Test pin. Normally: GND
11	PDO	O	Analog EFM PLL charge pump output
12	Vss		GND
13	NC	–	
14	NC	–	
15	NC	–	
16	VPCO	O	Variable pitch PLL charge pump output
17	VCKI	I	Clock input (fccenter=16.9344 MHz) from variable pitch external VCO
18	FILO	O	Master PLL (slave=digital PLL) filter output
19	FILI	I	Master PLL filter input
20	PCO	O	Master PLL charge pump output
21	AVss		Analog GND
22	CLTV	I	Master VCO control voltage input
23	AVDD		Analog power supply (+5V)
24	RF	I	EFM signal input
25	BIAS	I	Asymmetry circuit constant-current input
26	ASYI	I	Asymmetry comparator voltage input
27	ASYO	O	EFM full swing output (L=Vss, H=VDD)
28	ASYE	I	"L": asymmetry circuit OFF. "H": asymmetry circuit ON
29	NC	–	Not used
30	PSSL	I	Audio data output mode select input. "L": serial output, "H": parallel output.
31	WDCK	O	48-bit slot D/A interface. Word clock f=2Fs
32	LRCK	O	48-bit slot D/A interface. LR clock f=Fs
33	VDD		Power supply (+5V)
34	DA16	O	DA16 (MSB) output when PSSL=1. 48-bit slot serial data (2s'COMP, MSB first) when PSSL=0.
35	DA15	O	DA15 output when PSSL=1. 48-bit slot bit clock when PSSL=0.
36	DA14	O	DA14 output when PSSL=1. 64-bit slot serial data (2s'COMP, LSB first) when PSSL=0.
37	DA13	O	DA13 output when PSSL=1. 64-bit slot bit clock when PSSL=0.
38	DA12	O	DA12 output when PSSL=1. 64-bit slot LR clock when PSSL=0.
39	DA11	O	DA11 output when PSSL=1. GTOP output when PSSL=0.
40	DA10	O	DA10 output when PSSL=1. XUGF output when PSSL=0.

Pin No.	Symbol	I/O	Description
41	DA09	O	DA09 output when PSSL=1. XPLCK output when PSSL=0.
42	DA08	O	DA08 output when PSSL=1. GFS output when PSSL=0.
43	DA07	O	DA07 output when PSSL=1. RFCK output when PSSL=0.
44	DA06	O	DA06 output when PSSL=1. C2P0 output when PSSL=0.
45	DA05	O	DA05 output when PSSL=1. XRAOF output when PSSL=0.
46	DA04	O	DA04 output when PSSL=1. MNT3 output when PSSL=0.
47	DA03	O	DA03 output when PSSL=1. MNT2 output when PSSL=0.
48	DA02	O	DA02 output when PSSL=1. MNT1 output when PSSL=0.
49	DA01	O	DA01 output when PSSL=1. MNT0 output when PSSL=0.
50	APTR	O	Control output for aperture compensation. "H": Rch.
51	APTL	O	Control output for aperture compensation. "H": Lch.
52	Vss		GND
53	XTAI	I	Crystal oscillation circuit input of 16.9344 MHz or 33.8688 MHz input.
54	XTAO	O	Crystal oscillation circuit output of 16.9344 MHz.
55	XTSL	I	Crystal select input pin. "L": when crystal=16.9344 MHz. "H": when crystal=33.8688 MHz.
56	FSTT	O	2/3 frequency-divided output of Pins 53 and 54. Not changed by variable pitch.
57	C4M	O	4.2336 MHz output. Simultaneously changed when variable pitched.
58	C16M	O	16.9344 MHz output. Simultaneously changed when variable pitched.
59	MD2	I	Digital-out ON/OFF control. "H": ON, "L": OFF.
60	DOUT	O	Digital-out output pin
61	EMPH	O	"H" output when the playback disc has emphasis. "L" output when no emphasis.
62	WFCK	O	WFCK (Write Frame Clock) output
63	SCOR	O	"H" output when subcode sync S0 or S1 is detected.
64	SBSO	O	Serial output of subP through subW.
65	EXCK	I	SBSO read out clock input
66	SQSO	O	Output of subQ 80-bit, PCM peak, and level data 16-bit.
67	SQCK	I	SQSO read out clock input
68	MUTE	I	Cancelled by mute "L" at "H".
69	SENS	–	SENS output. Output to CPU.
70	XRST	I	System reset. "L": reset.
71	DATA	I	Serial data input from CPU
72	XLAT	I	Latch input from CPU. Serial data is latched at falling.
73	VDD		Power supply (+5V)
74	CLOK	I	Serial data transfer clock input from CPU
75	SEIN	I	SENSE input from SSP
76	CNIN	I	Track jump number count signal input
77	DATO	O	Serial data output to SSP
78	XLTO	O	Serial data latch output to SSP. Latched at falling.
79	CLKO	O	Serial data transfer clock output to SSP
80	MIRR	I	Mirror signal input. Used for jumping 128 tracks or more in auto sequencer.

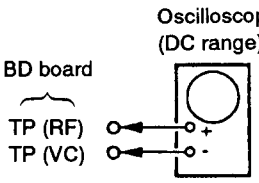
Pin No.	Symbol	I/O	Description
41	T8	O	Timing signal output
42	T9	O	Timing signal output
43	T10	O	Timing signal output
44	T11	O	Timing signal output
45	NC		Not used
46	S27	O	Segment signal output
47	S26	O	Segment signal output
48	S25	O	Segment signal output
49	VFLT		+34V
50	S24	O	Segment signal output
51	S23	O	Segment signal output
52	S22	O	Segment signal output
53	S21	O	Segment signal output
54	S20	O	Segment signal output
55	S19	O	Segment signal output
56	S18	O	Segment signal output
57	S17	O	Segment signal output
58	S16	O	Segment signal output
59	S15	O	Segment signal output
60	S14	O	Segment signal output
61	S13	O	Segment signal output
62	S12	O	Segment signal output
63	S11	O	Segment signal output
64	S10	O	Segment signal output
65	S9	O	Segment signal output
66	S8	O	Segment signal output
67	S7	O	Segment signal output
68	S6	O	Segment signal output
69	S5	O	Segment signal output
70	S4	O	Segment signal output
71	S3	O	Segment signal output
72	S2	O	Segment signal output
73	S1	O	Segment signal output
74	V_{DD}		Power
75	SCAN0	O	Key-scan signal output
76	SCAN1	O	Key-scan signal output
77	SCAN2	O	Key-scan signal output
78	SCAN3	O	Key-scan signal output
79	SCAN4	O	Key-scan signal output
80	SCAN5	O	Key-scan signal output

Pin No.	Symbol	I/O	Description
41	SFON		Not used
42	NC		Not used
43	DVss		Digital GND
44	NC		Not used
45	TEST		Fixed to "L".
46	NC		Not used
47	TFDR	O	Tracking drive signal output (FWD)
48	TRON		Not used
49	TRDR	O	Tracking drive signal output (REVERSE)
50	TFON		Not used
51	FFDR	O	Focus drive signal output (FWD)
52	FRON		Not used
53	FRDR	O	Focus drive signal output (REVERSE)
54	FFON		Not used
55	NC		Not used
56	SSTP	I	Limit switch detection
57	NC		Not used
58	CDS	I	Used at "H".
59	NC		Not used
60	DVDD		Digital +5V
61	AVDD		Analog +5V
62	IGEN		Input for operation amplifier current source
63	NC		Not used
64	AVss		Analog GND

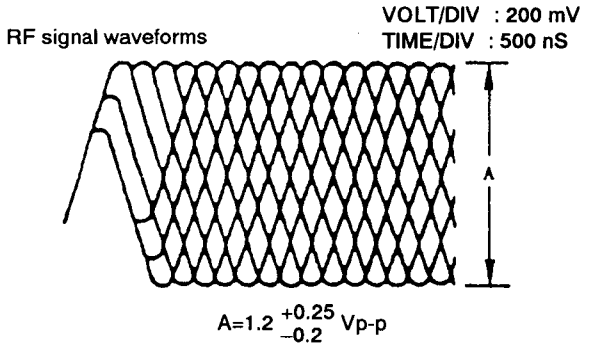
SECTION 4
ELECTRICAL BLOCK CHECKING

1. Check in order of descriptions below.
2. The disc [YEDS-18] part code No. 3-702-101-01, should be used but do not apply it unless direction is given.
3. Use the oscilloscope with more than 10 MΩ impedance.

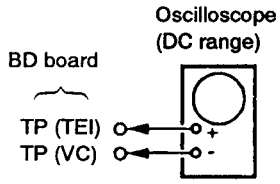
[RF Level Check]



1. Connect the oscilloscope to test points, TP (RF) and TP (VC).
2. Turn POWER switch on.
3. Insert the disc (YEDS-18) and to press ▷ PLAY button.
4. Check the waveforms to be normal and RF level to be proper. Normal waveforms means ◇ form can be observed clearly in the center of the each waveform.

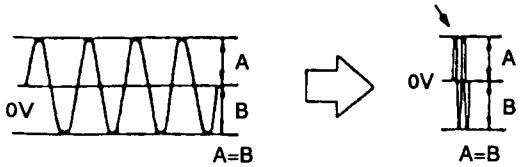


[E-F Balance Check]

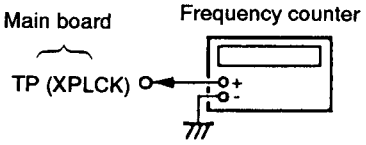


1. Earch TP (ADJ) and TP (TE).
2. Connect the oscilloscope to TP (TEI).
3. Turn POWER switch on.
4. Insert ther disc (YEDS-18) and press the ▷ PLAY button.
5. Confirm waveforms of the oscilloscope to be vertically symmetrical in relation to 0V line.
6. Remove the earths of TP (ADJ) and TP (TE).

(Note) Prolonged sweeping time makes it easy to see.



[RF PLL Free-running Frequency Check]



1. Turn POWER switch on.
2. Insert the disc (YEDS-18) and push the ▷ PLAY button. Confirm the frequency of TP (XPLCK) to be 4.3218 MHz.

[Focus/Tracking Gain Check]

Focus/Tracking gain determines the follow-up of pick-up relating to mechanical noise and shock which occur when the 2-axis device operates.

However, as these are contrary to each other, the micro-computer automatically adjusts the position to the point that both are satisfied with.

- When gain is raised, the noise in the 2-axis device operation increases.
- When gain is lowered, it is more susceptible to mechanical shock, and tends to skip easily.

When gain is not normal, the symptoms below appears.

Gain / Synptoms	Focus	Tracking
• It takes longer time till music starts when STOP ➡▷ PLAY or automatic selection (⏮ , ⏭ buttons pressed). (Normally it takes about 2 seconds).	low	low or high
• In spite of STOP ➡▷ PLAY or automatic selection (⏮ , ⏭ button pressed), disc continues to rotate without music begining to play.	—	low
• Sound is interrupted during PLAY. Or the time counter display stops to progress.	—	low
• The noise increases during 2-axis device operating.	high	high

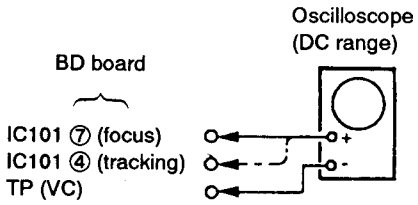
[Focus Gain Check]

1. Keep the set horizontal.
   (Keep the set horizontal, or this adjustment cannot be performed due to the gravity against the 2-axis device.)
2. Insert disc (YEDS-18: the 5th song) and press ▷ PLAY button.
3. Connect the oscilloscope to IC101 ⑦ terminal on BD board.
4. Check waveforms of the oscilloscope to shape ones as shown in figure below.

[Tracking Gain Check]

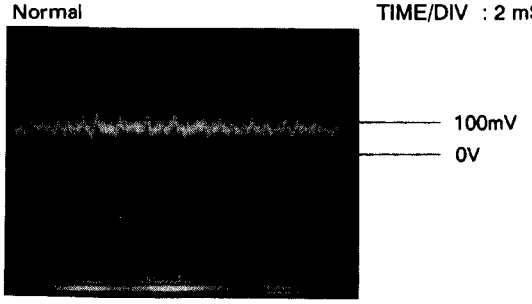
1. Connect the oscilloscope to the IC101 ④ terminal.
2. Check waveforms of the oscilloscope to shape ones as shown in figure below.

Measuring points:



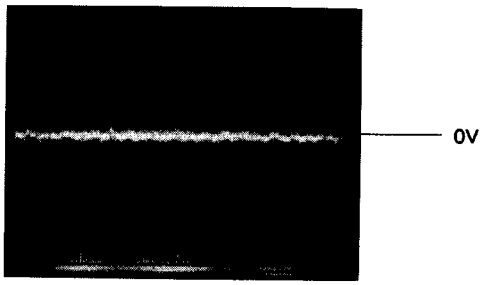
Normal

VOLT/DIV : 100 mV
TIME/DIV : 2 mS



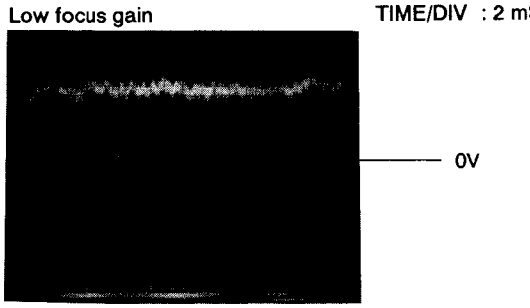
Normal

VOLT/DIV : 500mV
TIME/DIV : 2 mS



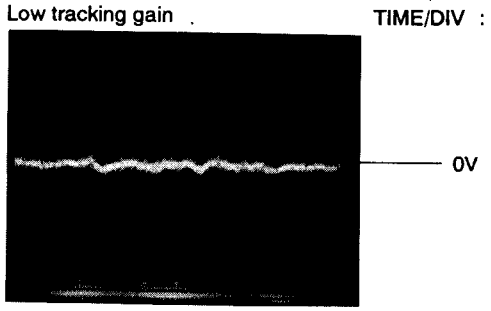
Low focus gain

VOLT/DIV : 100 mV
TIME/DIV : 2 mS



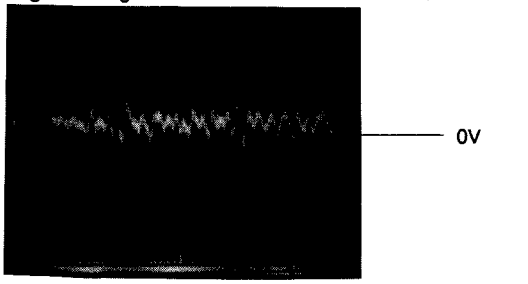
Low tracking gain

VOLT/DIV : 500mV
TIME/DIV : 2 mS



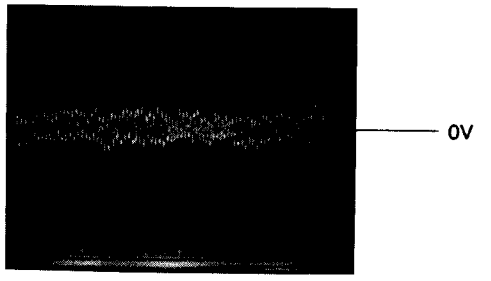
High focus gain

VOLT/DIV : 100 mV
TIME/DIV : 2 mS



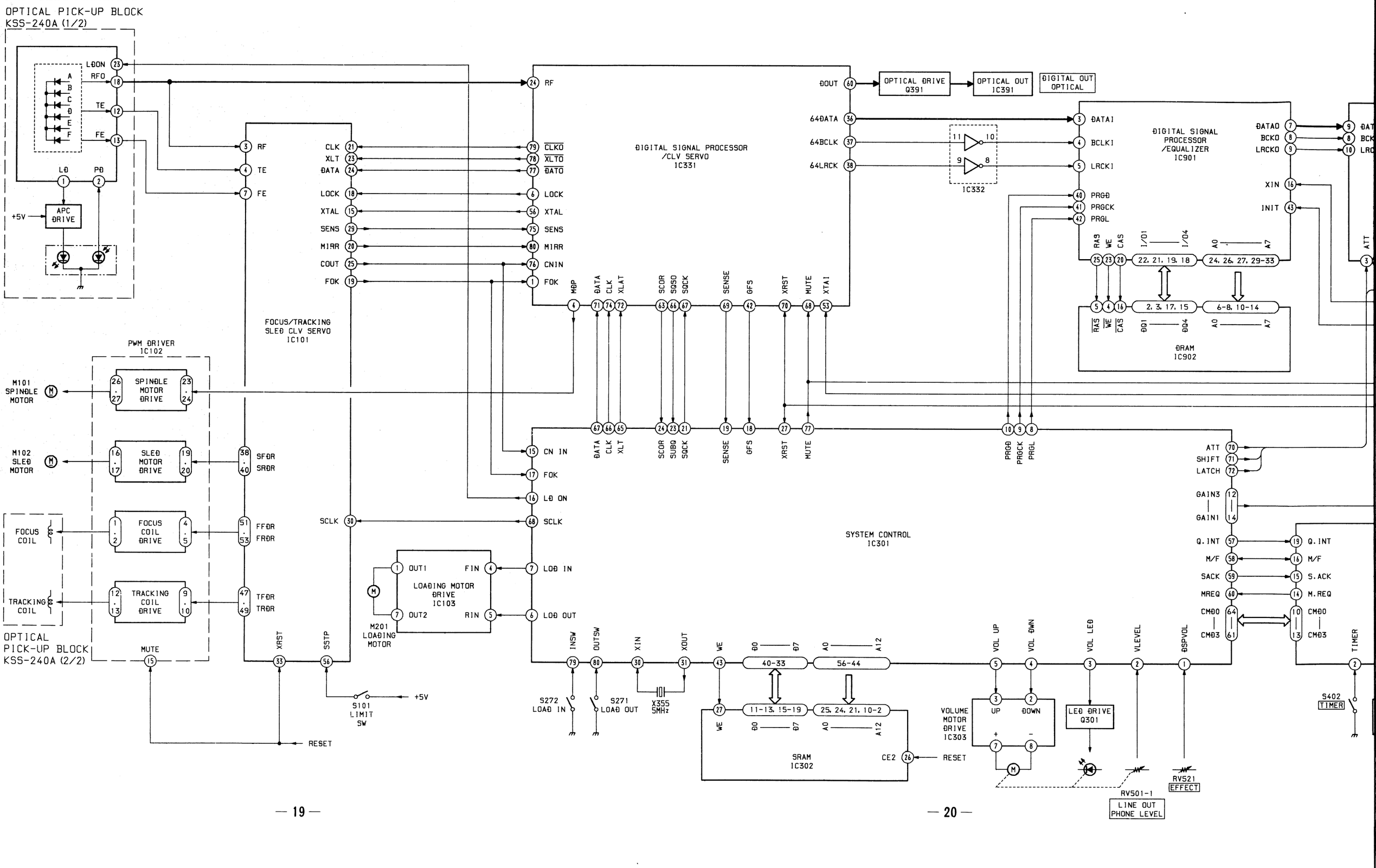
VOLT/DIV : 500mV
TIME/DIV : 2 mS

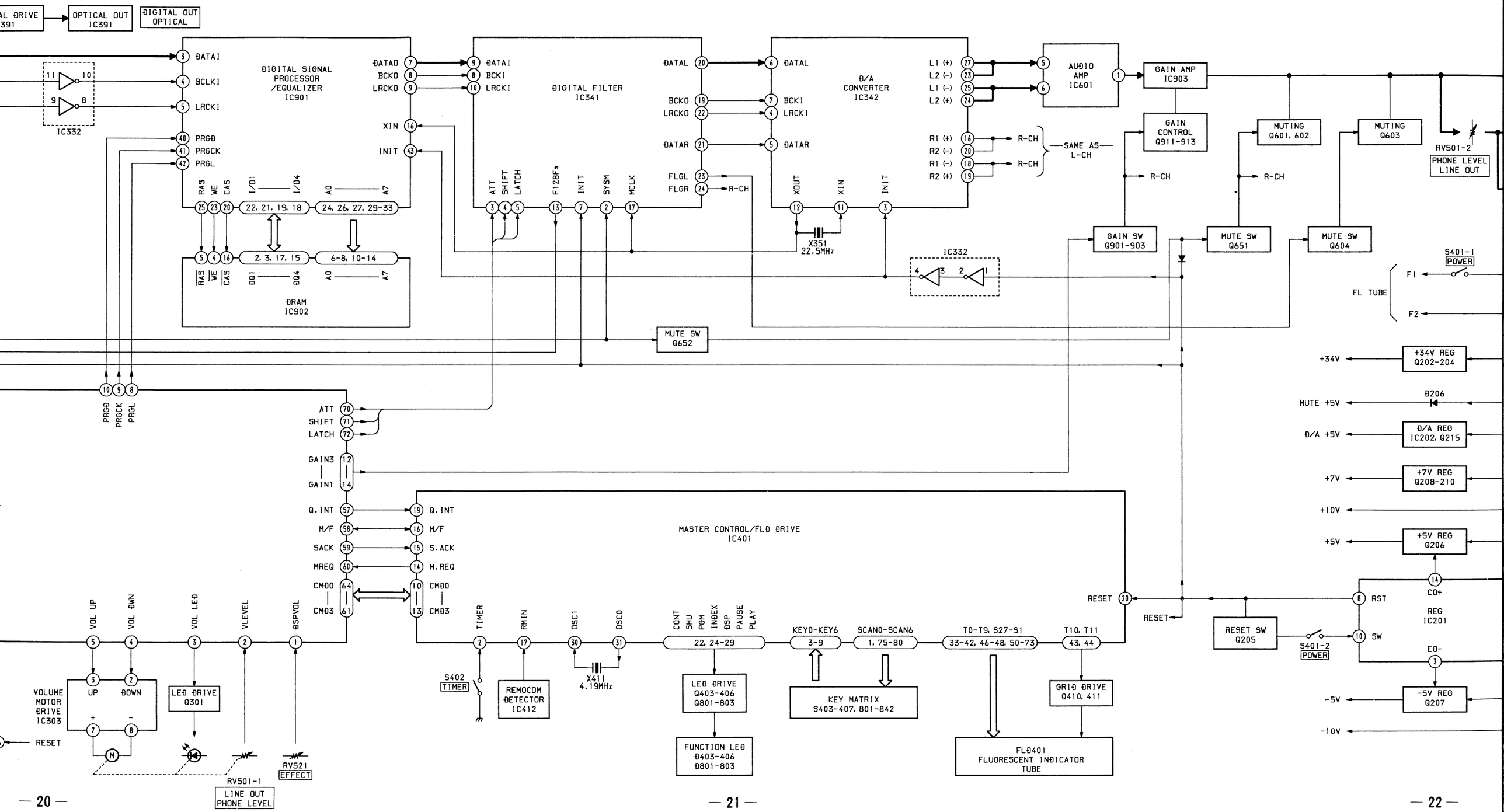
High tracking gain
(The fundamental wave is higher than when gain is low.)

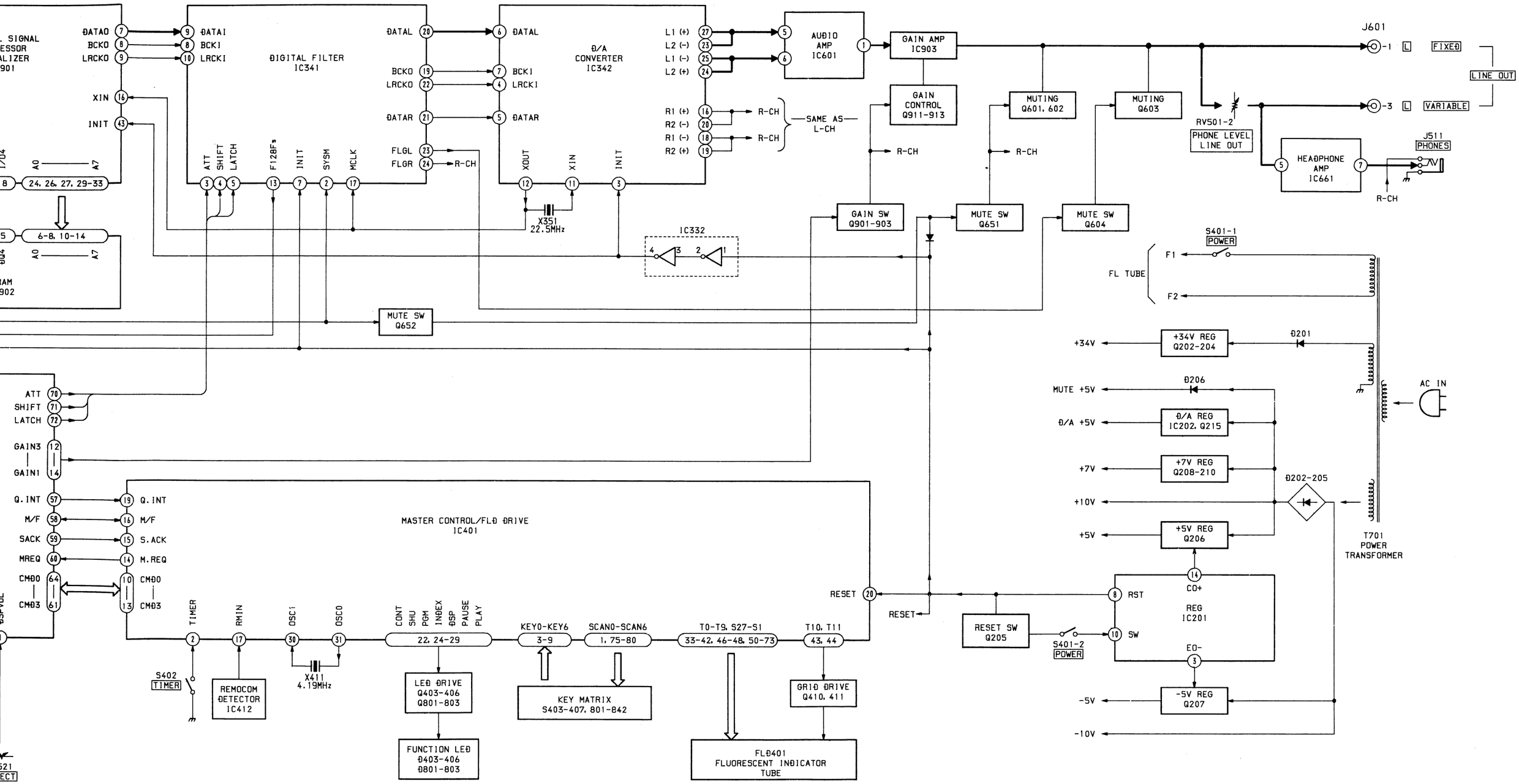


SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM



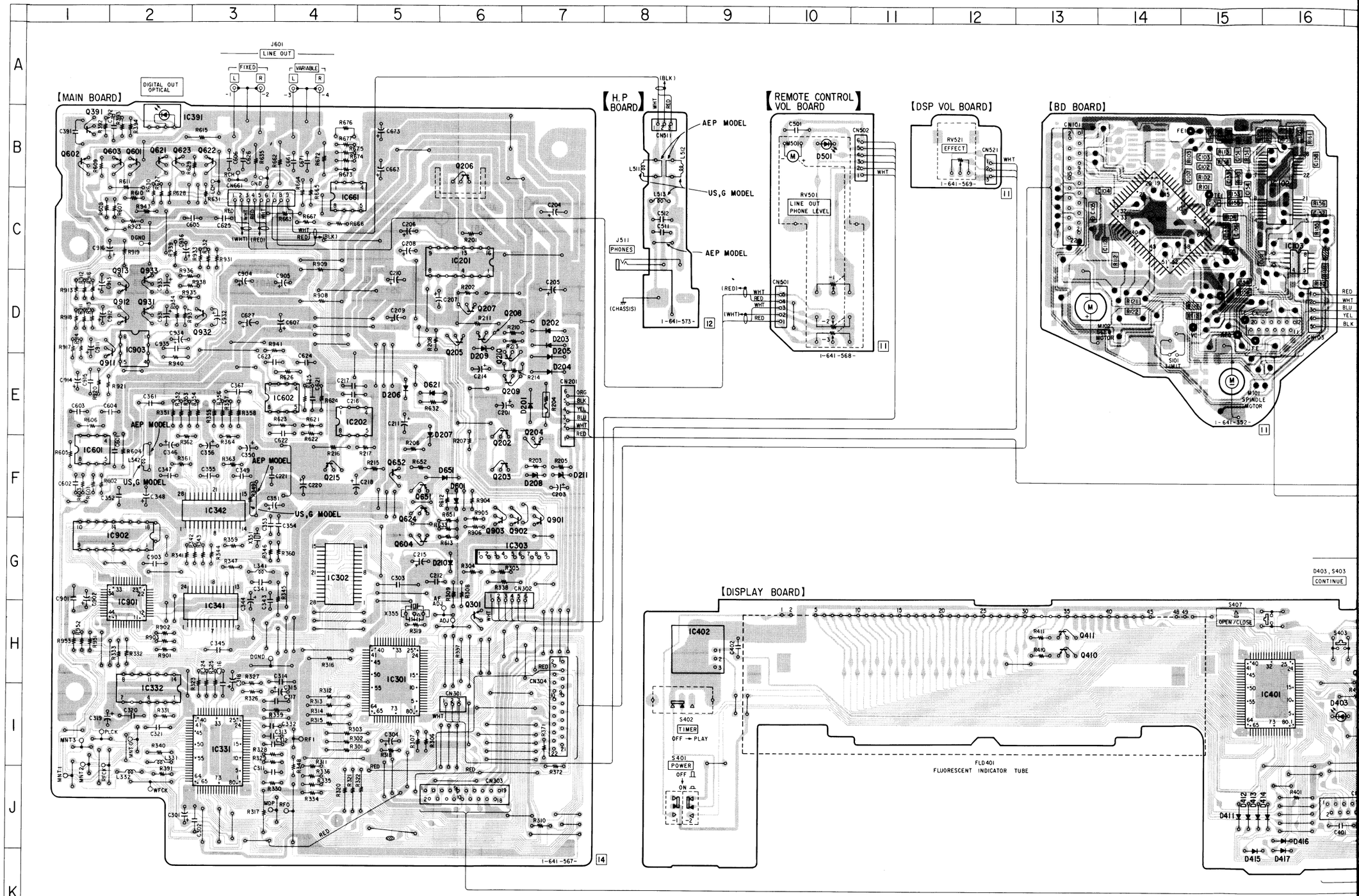

AL DRIVE 391
OPTICAL OUT IC391
DIGITAL OUT OPTICAL
IC332
DATAI
BCLKI
LRCKI
PRGD
PRGCK
PRGL
DIGITAL SIGNAL PROCESSOR /EQUALIZER IC901
DATAO
BCKO
LRCKO
XIN
INIT
RAS
WE
CAS
I/O1 — I/O4
A0 — A7
22, 21, 19, 18
24, 26, 27, 29-33
2, 3, 17, 15
6-8, 10-14
DQ1 — DQ4
DRAM IC902
DIGITAL FILTER IC341
ATT
SHIFT
LATCH
F128Fs
INIT
SYSM
MCLK
FLGL
FLGR
R-CH
D/A CONVERTER IC342
XOUT
XIN
INIT
X351 22.5MHz
L1 (+)
L2 (-)
L1 (-)
L2 (+)
R1 (+)
R2 (-)
R1 (-)
R2 (+)
R-CH
SAME AS L-CH
AUDIO AMP IC601
GAIN AMP IC903
GAIN CONTROL Q911-913
MUTING Q601, 602
MUTING Q603
RV501-2
PHONE LEVEL LINE OUT
GAIN SW Q901-903
MUTE SW Q651
MUTE SW Q604
S401-1 POWER
F1
F2
FL TUBE
MUTE SW Q652
+34V REG Q202-204
+34V
D206
MUTE +5V
D/A REG IC202, Q215
D/A +5V
+7V REG Q208-210
+7V
+10V
+5V REG Q206
+5V
CO+
RST
REG IC201
EO-
-5V REG Q207
-5V
-10V
RESET
RESET SW Q205
S401-2 POWER
SW
PRGD
PRGCK
PRGL
ATT
SHIFT
LATCH
GAIN3 — GAIN1
Q.INT
M/F
SACK
MREQ
CMD0 — CMD3
MASTER CONTROL/FLD DRIVE IC401
VOL UP
VOL DWN
VOL LED
VLEVEL
DSPVOL
VOLUME MOTOR DRIVE IC303
UP
DOWN
LED DRIVE Q301
RV521 EFFECT
RV501-1 LINE OUT PHONE LEVEL
TIMER
RMIN
OSCI
OSCO
S402 TIMER
REMOCOM DETECTOR IC412
X411 4.19MHz
CONT
SHU
PGM
INDEX
DSP
PAUSE
PLAY
22, 24-29
LED DRIVE Q403-406 Q801-803
FUNCTION LED D403-406 D801-803
KEY0-KEY6
SCAN0-SCAN6
3-9
1, 75-80
KEY MATRIX S403-407, 801-842
T0-T9, S27-S1
T10, T11
33-42, 46-48, 50-73
43, 44
GRID DRIVE Q410, 411
FLD401 FLUORESCENT INDICATOR TUBE


DATAO
BCKO
LRCKO
XIN
INIT
DATAI
BCKI
LRCKI
DIGITAL FILTER
IC341
DATAL
BCKO
LRCKO
DATAR
FLGL
FLGR
R-CH
ATT
SHIFT
LATCH
F128Fs
INIT
SYSM
MCLK
XOUT
XIN
INIT
X351
22.5MHz
D/A
CONVERTER
IC342
L1 (+)
L2 (-)
L1 (-)
L2 (+)
R1 (+)
R2 (-)
R1 (-)
R2 (+)
R-CH
SAME AS
L-CH
AUDIO
AMP
IC601
GAIN AMP
IC903
GAIN
CONTROL
Q911-913
MUTING
Q601, 602
MUTING
Q603
J601
FIXED
LINE OUT
VARIABLE
RV501-2
PHONE LEVEL
LINE OUT
HEADPHONE
AMP
IC661
J511
PHONES
GAIN SW
Q901-903
MUTE SW
Q651
MUTE SW
Q604
IC332
S401-1
POWER
FL TUBE
F1
F2
MUTE SW
Q652
+34V
+34V REG
Q202-204
D201
D206
MUTE +5V
D/A +5V
D/A REG
IC202, Q215
+7V
+7V REG
Q208-210
D202-205
+10V
+5V
+5V REG
Q206
AC IN
T701
POWER
TRANSFORMER
CO+
RST
REG
IC201
SW
EO-
-5V
-5V REG
Q207
-10V
RESET
RESET SW
Q205
S401-2
POWER
ATT
SHIFT
LATCH
GAIN3
GAIN1
Q. INT
M/F
SACK
MREQ
CMD0
CMD3
MASTER CONTROL/FLD DRIVE
IC401
TIMER
RMIN
OSCI
OSCO
X411
4.19MHz
S402
TIMER
REMOCOM
DETECTOR
IC412
CONT
SHU
PGM
INDEX
DSP
PAUSE
PLAY
22, 24-29
LED DRIVE
Q403-406
Q801-803
FUNCTION LED
D403-406
D801-803
KEY0-KEY6
3-9
SCAN0-SCAN6
1, 75-80
KEY MATRIX
S403-407, 801-842
T0-T9, S27-S1
33-42, 46-48, 50-73
T10, T11
43, 44
GRID DRIVE
Q410, 411
FLD401
FLUORESCENT INDICATOR
TUBE
A0
A7
24, 26, 27, 29-33
6-8, 10-14

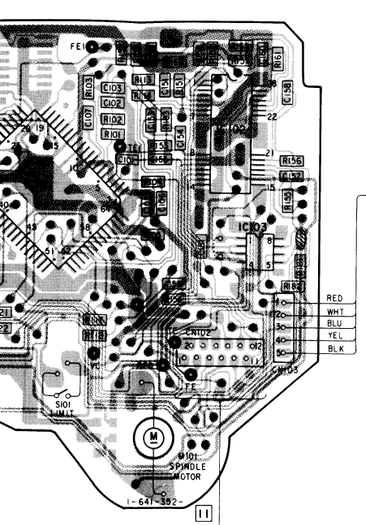
5-2. PRINTED WIRING BOARDS

• **Semiconductor Location**

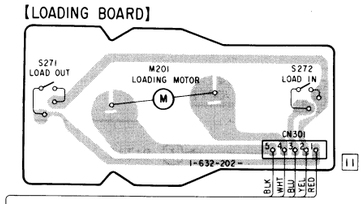
Ref. No.	Location	Ref. No.	Location
D201	E-7	Q202	F-6
D202	D-7	Q203	F-6
D203	D-7	Q204	E-7
D204	E-7	Q205	D-6
D205	D-7	Q206	B-6
D206	E-5	Q207	D-6
D207	E-6	Q208	D-6
D208	F-7	Q209	E-6
D209	E-6	Q210	E-6
D210	G-6	Q215	F-4
D211	F-7	Q301	H-6
D403	I-16	Q391	B-1
D404	I-17	Q403	H-17
D405	I-17	Q404	I-17
D406	I-18	Q405	H-17
D411	J-15	Q406	H-18
D412	J-15	Q410	H-13
D413	J-15	Q411	H-13
D414	J-16	Q601	B-2
D415	K-15	Q602	B-1
D416	J-16	Q603	B-2
D417	K-16	Q604	G-5
D601	F-6	Q621	B-2
D621	E-5	Q622	B-3
D651	F-6	Q623	B-2
D801	H-19	Q624	F-5
D802	J-19	Q651	F-5
D803	H-21	Q652	F-5
		Q801	H-19
IC101	C-14	Q802	H-20
IC102	B-16	Q803	H-20
IC103	C-16	Q901	F-7
IC201	C-6	Q902	G-6
IC202	E-5	Q903	G-6
IC301	H-5	Q911	E-2
IC302	G-4	Q912	D-2
IC303	G-6	Q913	D-2
IC331	I-3	Q931	D-2
IC332	I-2	Q932	D-3
IC341	H-3	Q933	D-2
IC342	F-3		
IC391	B-3		
IC401	I-16		
IC402	H-9		
IC601	F-1		
IC602	E-4		
IC661	C-4		
IC901	H-2		
IC902	G-2		
IC903	D-2		



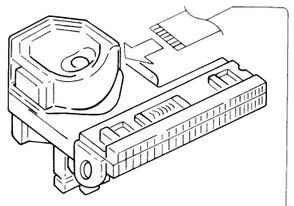
14 15 16 17 18 19 20 21 22 23 24



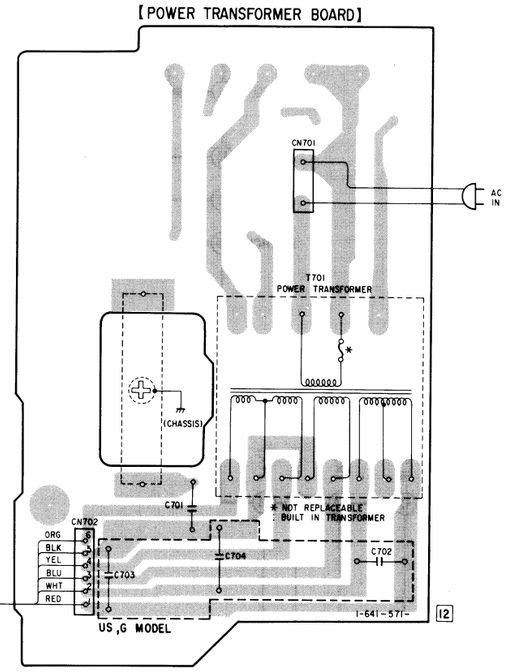
【LOADING BOARD】



OPTICAL PICK-UP BLOCK
KSS-240A

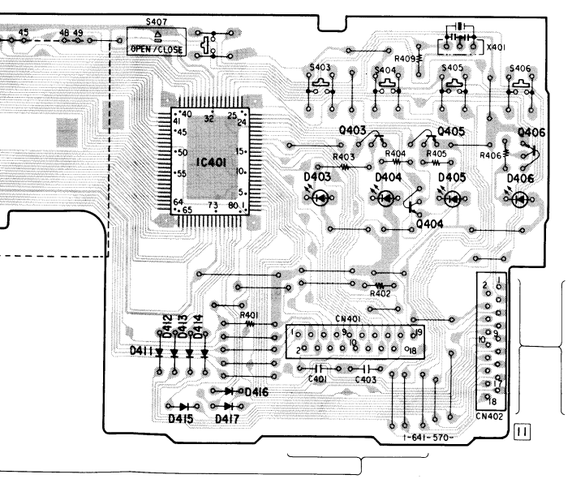


【POWER TRANSFORMER BOARD】

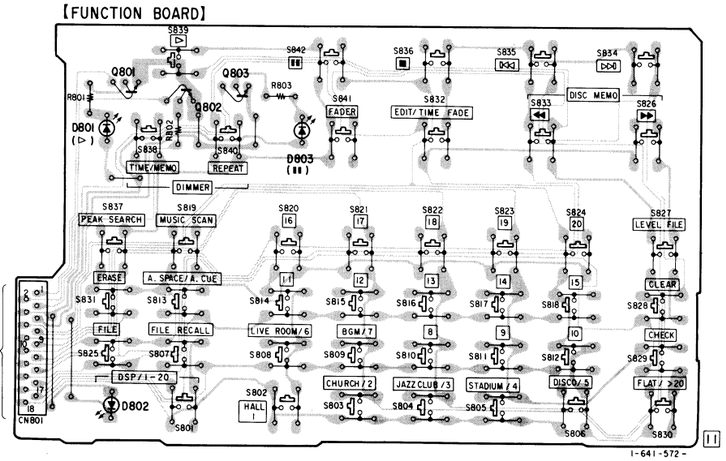


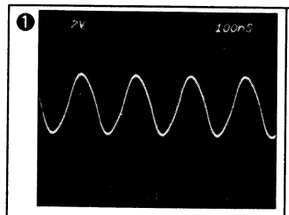
PLAY MODE

D403, S403	D404, S404	D405, S405	D406, S406
CONTINUE	SHUFFLE	PROGRAM	C. INDEX

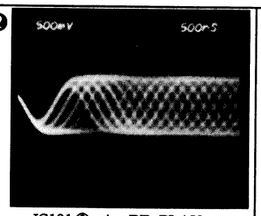


【FUNCTION BOARD】

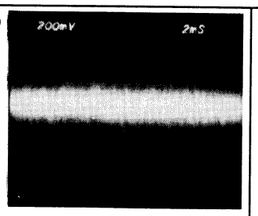


❶ 

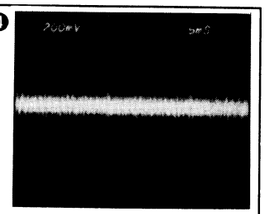
IC401㉚ pin OSC1

❷ 

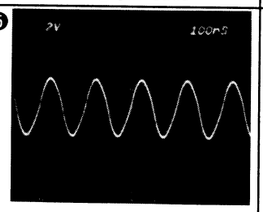
IC101③ pin RF PLAY
IC331㉔ pin RF PLAY

❸ 

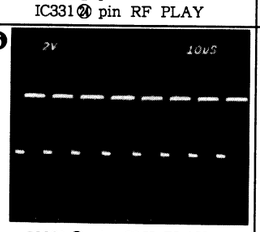
IC101④ pin TE PLAY

❹ 

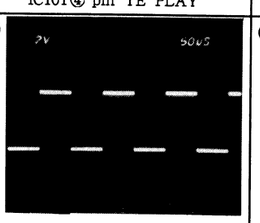
IC101⑦ pin FE PLAY

❺ 

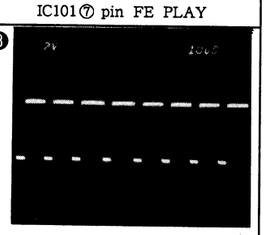
IC301㉛ pin X. OUT

❻ 

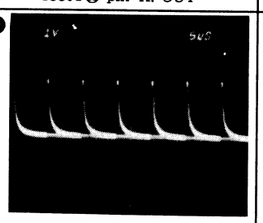
IC301㉘ pin CLK PLAY
IC331㉑ pin CLK PLAY

❼ 

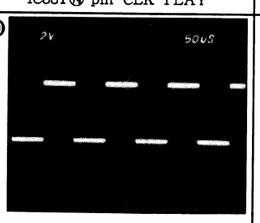
IC331㉜ pin WFCK

❽ 

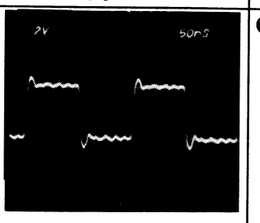
IC331㉙ pin CLKO PLAY

❾ 

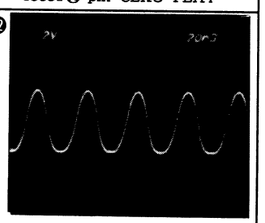
IC331④ pin MDPPLAY

❿ 

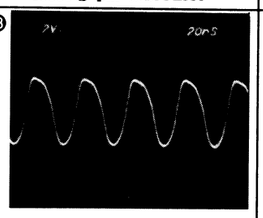
IC331㊸ pin RF CK

⓫ 

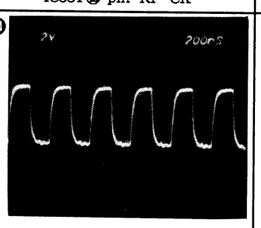
IC331㊶ pin XPLCK PLAY

⓬ 

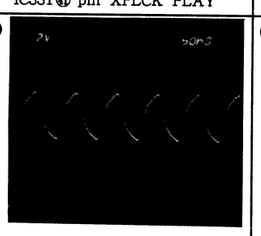
IC901⑯ pin X. IN

⓭ 

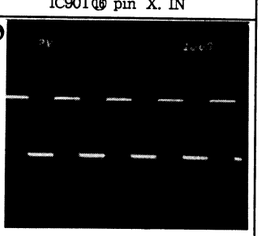
IC342⑫ pin X. OUT

⓮ 

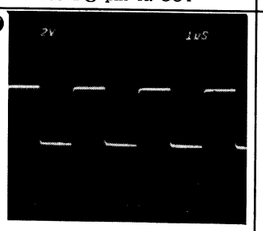
IC341⑧ pin BCKI

⓯ 

IC342⑦ pin BCKI

⓰ 

IC341⑩ pin LRCKI

⓱ 

IC342④ pin LRCKI

Note on Mounting Diagram:

Note:

- ○——○ : parts extracted from the component side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ▨ : Pattern of the rear side.
- ○—●—○ : **Denotes that Jumper wire works as Test Point.**

G: GERMANY

Note on Schematic Diagram:

Note:

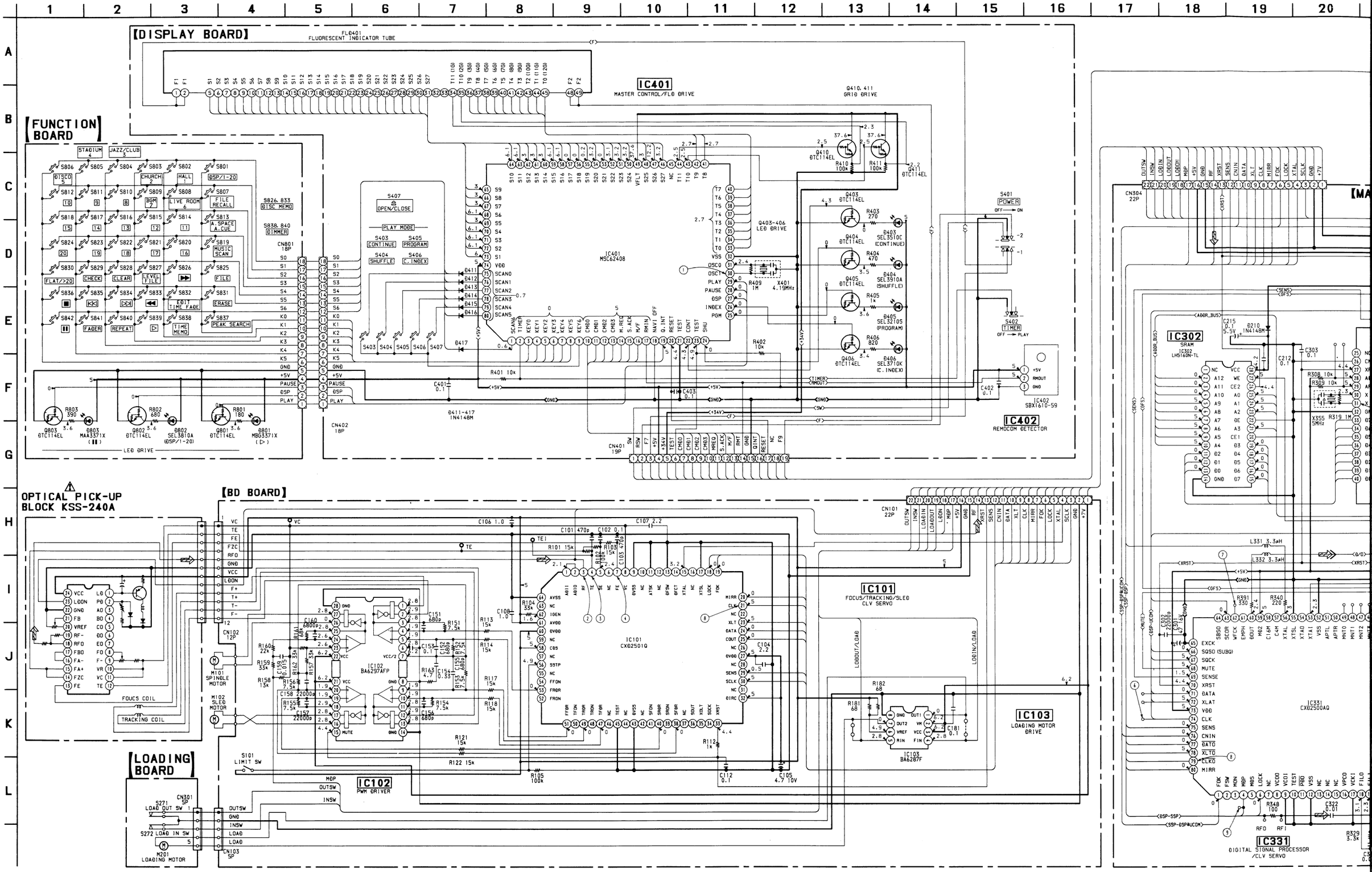
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ⏦ : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- ▬▬ : B+ Line
- ▬ ▬ : B− Line
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path. ⇉ : CD ⇉ : digital out

5-3. SCHEMATIC DIAGRAM

- Refer to page 32 for IC BLOCK Diagrams.
- Refer to page 34 for Semiconductor Lead Layouts.



16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37

【REMOTE CONTROL】
VOL BOARD (1/2)

【DSP VOL BOARD】

【MAIN BOARD】

IC301
SYSTEM CONTROL

IC302
SRAM
LH5160N-TL

IC303
VOLUME MOTOR DRIVE
BA6208

IC331
DIGITAL SIGNAL PROCESSOR
/CLV SERVO

IC332
INVERTER

IC341
DIGITAL FILTER

IC342
D/A CONVERTER

IC901
DIGITAL SIGNAL PROCESSOR
/EQUALIZER

IC902
DRAM

IC201
REG

IC202
D/A REG

IC601
AUDIO AMP

IC602
AUDIO AMP

IC903
GAIN AMP

Q901-903
GAIN SW

Q604, 624
MUTE SW

Q205
RESET SW

Q209
REG SW

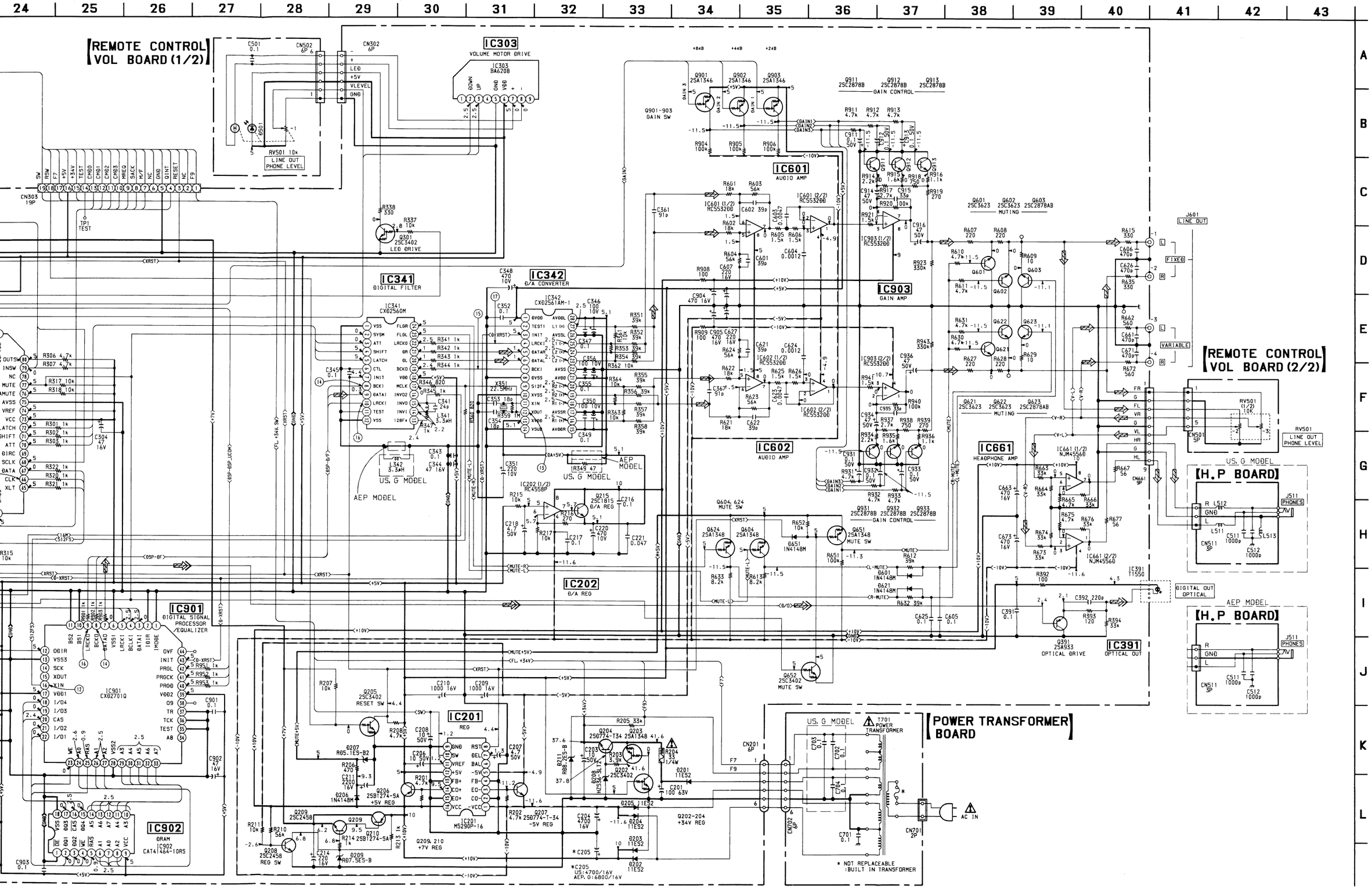
Q651
MUTE SW

Q652
MUTE SW

Q624
GAIN CONTROL

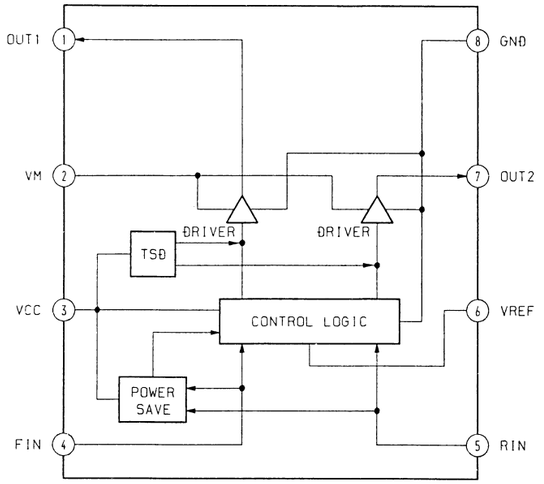
Q912
GAIN CONTROL

AEP MODEL
US, G MODEL

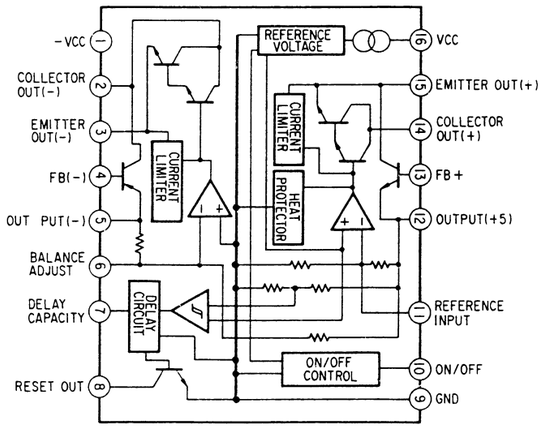

REMOTE CONTROL VOL BOARD (1/2)
REMOTE CONTROL VOL BOARD (2/2)
IC303 VOLUME MOTOR DRIVE
IC601 AUDIO AMP
IC602 AUDIO AMP
IC903 GAIN AMP
IC341 DIGITAL FILTER
IC342 D/A CONVERTER
IC202 D/A REG
IC201 REG
IC901 DIGITAL SIGNAL PROCESSOR /EQUALIZER
IC902 DRAM
IC661 HEADPHONE AMP
IC391 OPTICAL OUT
POWER TRANSFORMER BOARD
H.P BOARD
US. G MODEL
AEP MODEL
LINE OUT PHONE LEVEL
MUTING
GAIN CONTROL
MUTE SW
OPTICAL DRIVE
RESET SW
REG SW
+5V REG
-5V REG
+34V REG
+7V REG
NOT REPLACEABLE :BUILT IN TRANSFORMER

• IC BLOCK DIAGRAMS

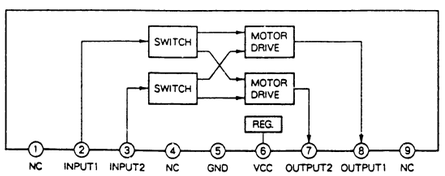
IC103 BA6287F



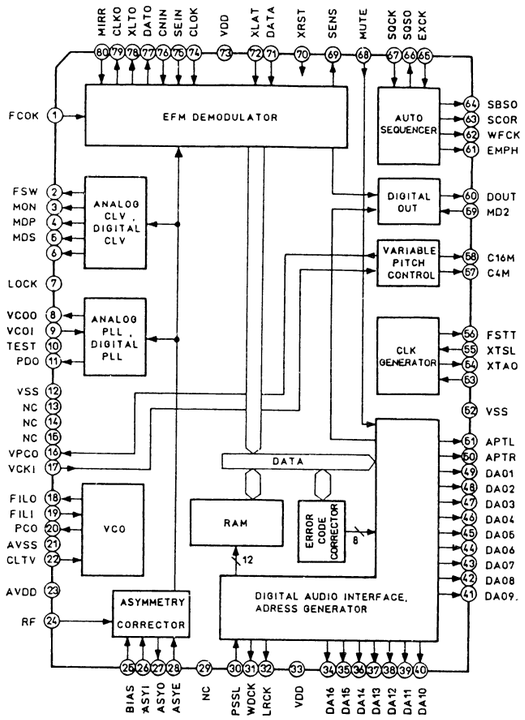
IC201 M5290P-16



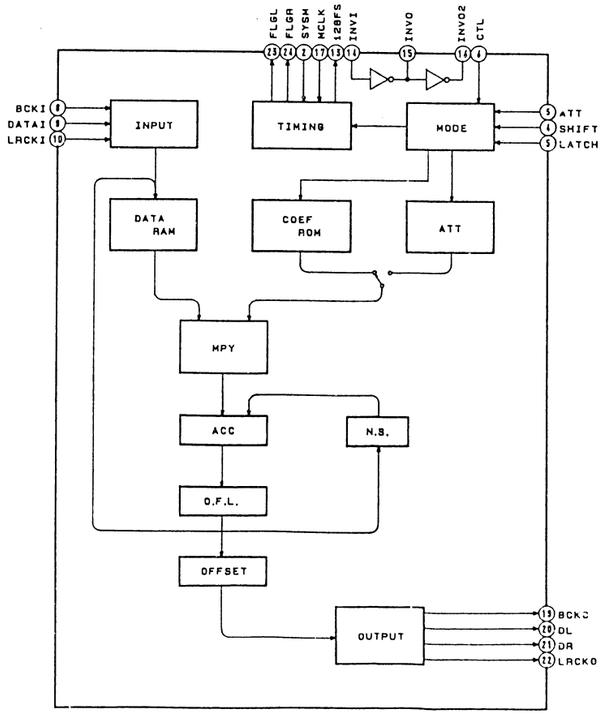
IC303 BA6208



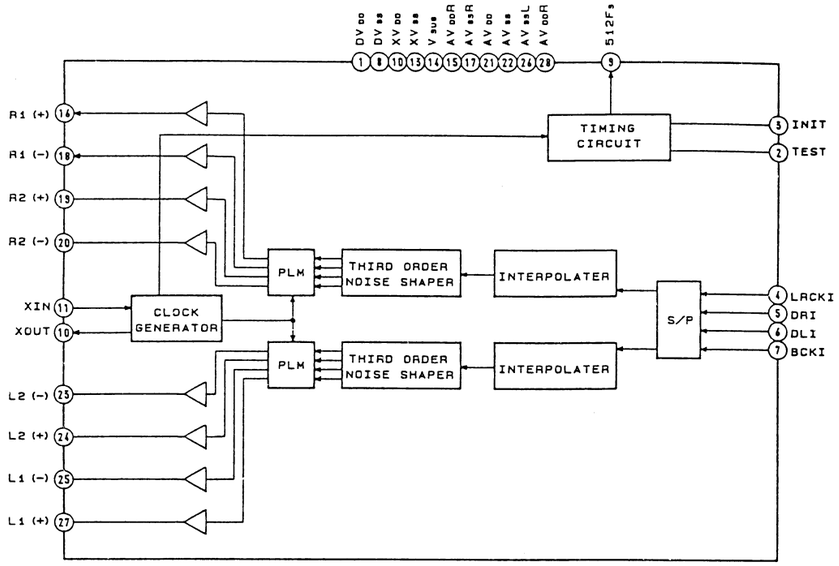
IC331 CXD2500AQ


MIRR CLKO XLTO DATO CMIN SEIN CLOK VDD XLAT DATA XRST SENS MUTE SQCK SQSO EXCK
EFM DEMODULATOR
AUTO SEQUENCER
ANALOG CLV, DIGITAL CLV
DIGITAL OUT
VARIABLE PITCH CONTROL
ANALOG PLL, DIGITAL PLL
CLK GENERATOR
DATA
RAM
ERROR CODE CORRECTOR
VCO
ASYMMETRY CORRECTOR
DIGITAL AUDIO INTERFACE, ADRESS GENERATOR
FCOK FSW MON MDP MDS LOCK VCOO VCOI TEST PDO VSS NC NC NC VPCO VCKI FILO FILI PCO AVSS CLTV AVDD RF
SBSO SCOR WFCK EMPH DOUT MD2 C16M C4M FSTT XTSL XTAO VSS APTL APTR DA01 DA02 DA03 DA04 DA05 DA06 DA07 DA08 DA09
BIAS ASYI ASYO ASYE NC PSSL WDCK LRCK VDD DA16 DA15 DA14 DA13 DA12 DA11 DA10

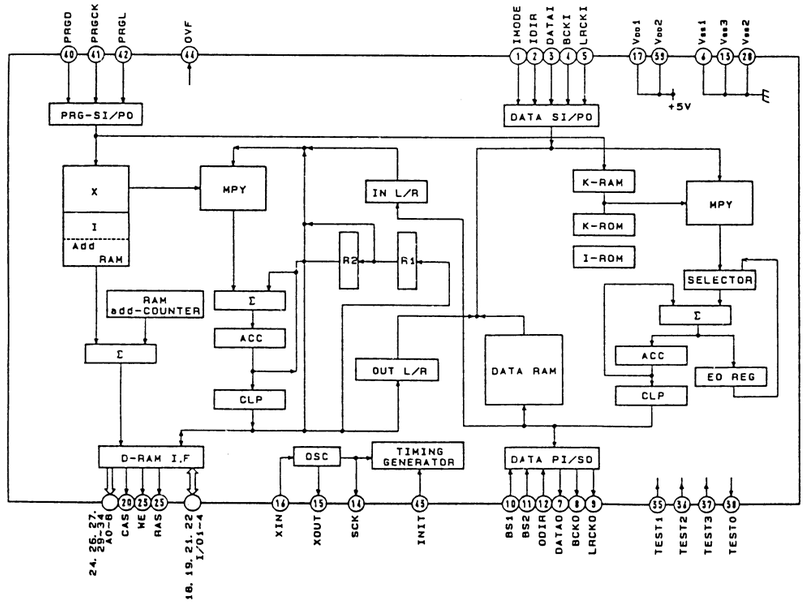
IC341 CXD2560M



IC342 CXD2561AM-1

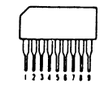

DV DD DV SS XV DD XV SS V SUB AV DDR AV SSR AV DD AV SS AV SSL AV DDR 512Fs
TIMING CIRCUIT
INIT TEST
R1 (+) R1 (-) R2 (+) R2 (-) XIN XOUT L2 (-) L2 (+) L1 (-) L1 (+)
PLM
THIRD ORDER NOISE SHAPER
INTERPOLATER
CLOCK GENERATOR
S/P
LRCKI DRI DLI BCKI

IC901 CXD2701Q

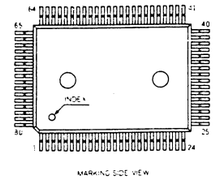


• SEMICONDUCTOR LEAD LAYOUTS

BA6208

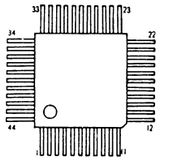


CXD2500AQ
MSC62408-033GS-VIK
M38063M6-162FP



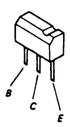
CXD2501Q

CXD2701Q

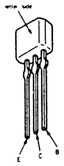


DTA114ES
DTA124ES
DTC114ES
2SC1815-Y

DTC114EF



2SA1175-HFE
2SC2785-HFE

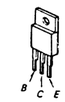


2SC2878-B

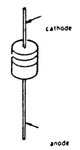
2SC3623A-LK

2SD774-34

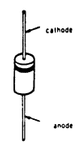
2SB1274SA-RS



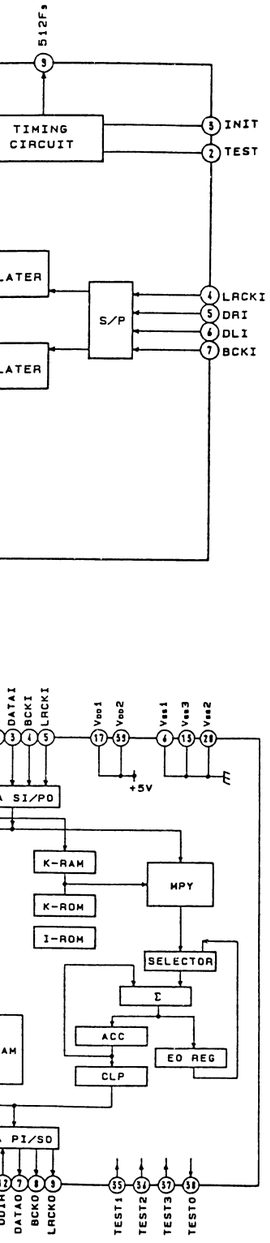
HZS36-3L
RD5.1ESB2
RD7.5ESB2
RD8.2ESB2
11ES2



1N4148M



• SEMICONDUCTOR LEAD LAYOUTS



BA6208

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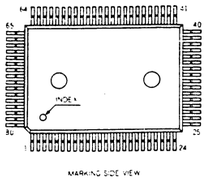
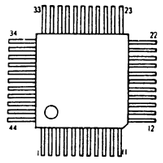
M38063M6-162FP



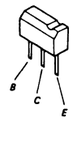
CXD2501Q

CXD2701Q

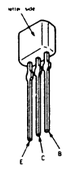


DTA114ES
DTA124ES
DTC114ES
2SC1815-Y

DTC114EF

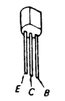


2SA1175-HFE
2SC2785-HFE



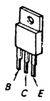
2SC2878-B

2SC3623A-LK

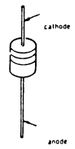


2SD774-34

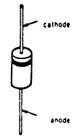
2SB1274SA-RS



HZS36-3L
RD5.1ESB2
RD7.5ESB2
RD8.2ESB2
11ES2



1N4148M



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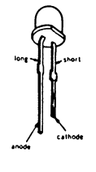
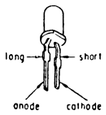
MBG3371X-9.5



SEL3210S-CD
SEL3510C-CD
SEL3710K-CD
SEL3910A-CD
SEL3810A-CD



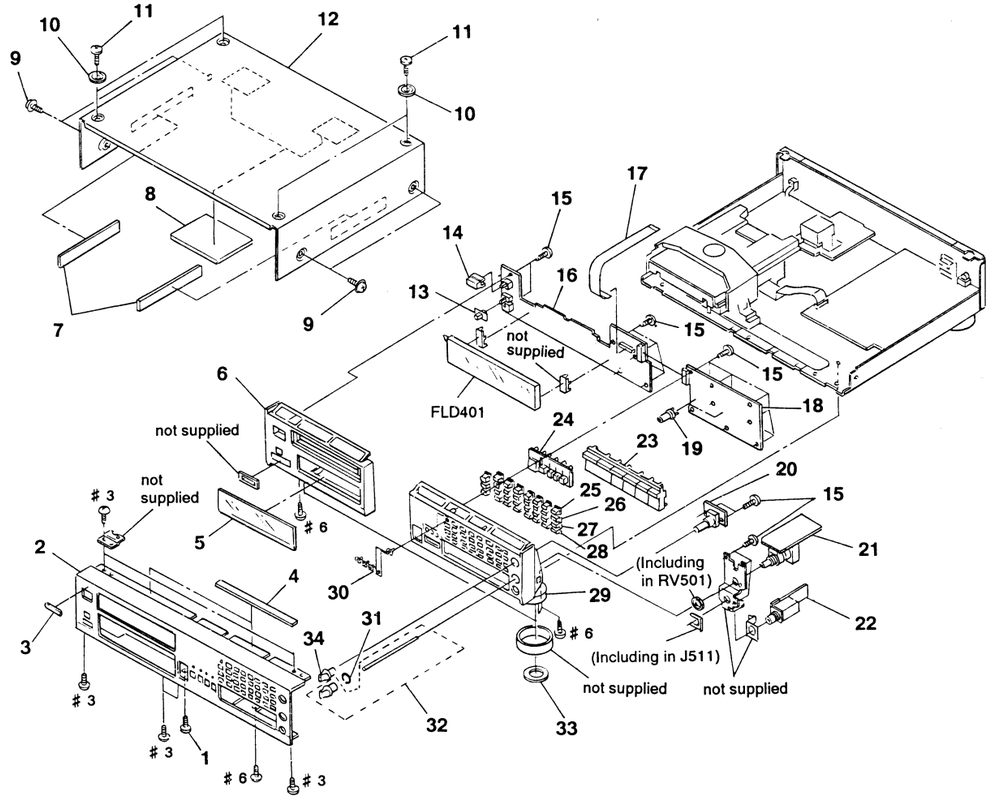
SECTION 6
EXPLODED VIEWS

NOTE:
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts color ↑ Cabinet's color
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

G: GERMANY

6-1. OPERATION ASSEMBLY



Ref. No.	Part No.	Description	Remark
1	3-703-685-21	SCREW (+BV 3X8)	
2	4-947-570-01	PANEL (FRONT) (US)	
2	4-947-570-11	PANEL (FRONT) (AEP)	
3	4-908-848-01	EMBLEM, SONY	
* 4	4-929-557-01	CUSHION (PANEL)	
5	4-947-571-01	PLATE, INDICATION	
6	X-4941-939-1	PANEL (BASE) (L) ASSY (AEP)	
6	X-4942-166-1	PANEL (BASE) (L) ASSY (US)	
* 7	4-929-561-01	CUSHION (CASE)	
* 8	4-922-943-01	DUMPER	
9	3-704-366-01	SCREW (CASE) (M3X8)	
10	4-928-025-11	ESCUTCHEON (TOP PLATE)	
11	3-721-187-01	SCREW (3X8)	
12	4-934-008-01	CASE	
13	4-922-518-11	KNOB (TIMER)	
14	4-947-034-01	BUTTON (POWER)	
15	4-951-620-01	SCREW (2.6X8), +BVTP	
* 16	A-4617-978-A	DISP BOARD, COMPLETE	
17	1-690-438-11	WIRE, FLAT TYPE (19 CORE)	
* 18	1-641-572-11	FUNCTION BOARD	
* 19	3-362-478-31	HOLDER (T), LED	
* 20	1-641-569-11	DSP VOL BOARD	
* 21	1-641-568-11	REMOTE CONTROL VOL BOARD	
* 22	1-641-573-11	H.P BOARD	
23	X-4941-938-1	BUTTON ASSY	
24	4-947-573-01	BUTTON (O/C)	
25	4-947-574-01	BUTTON (MC1)	
26	4-947-575-01	BUTTON (MC2)	
27	4-947-576-01	BUTTON (MC3)	
28	4-947-577-01	BUTTON (MC4)	
29	X-4941-940-1	PANEL (BASE) (R) ASSY (AEP)	
29	X-4942-167-1	PANEL (BASE) (R) ASSY (US)	
30	4-947-578-01	INDICATOR (MODE)	
31	4-948-469-01	SPRING, RING	
32	A-4604-901-A	KNOB (HP) ASSY	
33	4-923-836-11	CUSHION	
34	4-948-345-01	KNOB (VOL)	
		FLD401 1-519-695-11 INDICATOR TUBE, FLUORESCENT	

6-2. MAI

Ref. No.	P
* 51	3
* 52	4
* 53	4
54	4
55	4
* 56	1
* 57	3
⚠58	1
⚠58	1
* 59	4

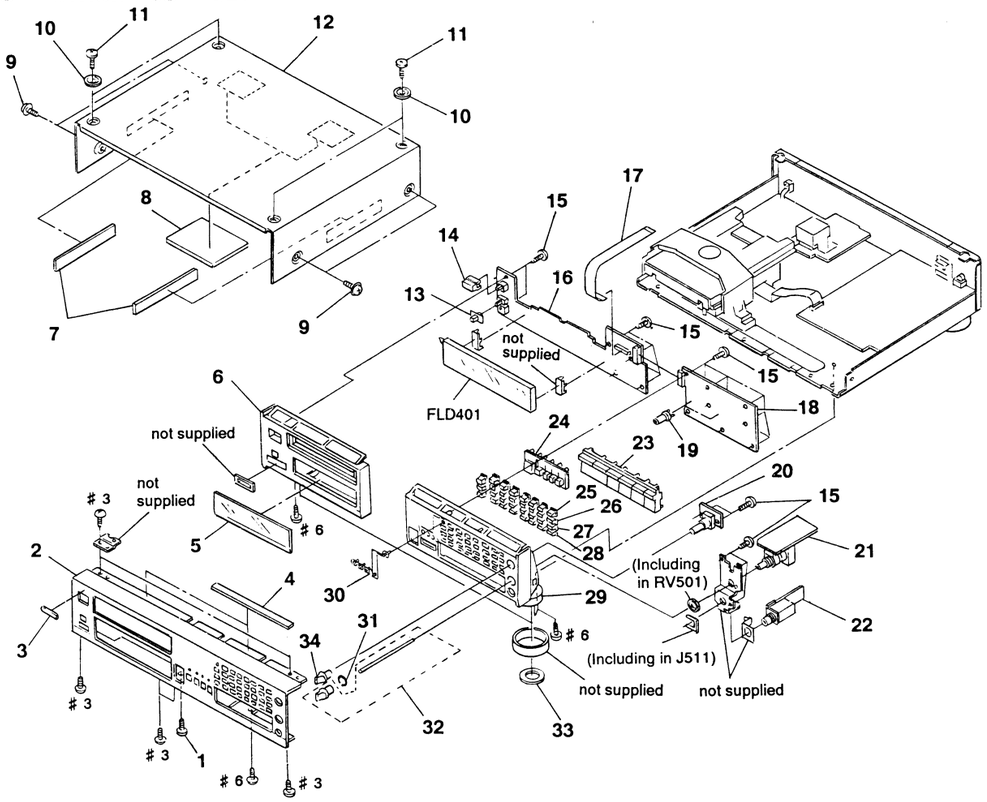
SECTION 6
EXPLODED VIEWS

NOTE:
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts color ↑ Cabinet's color
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

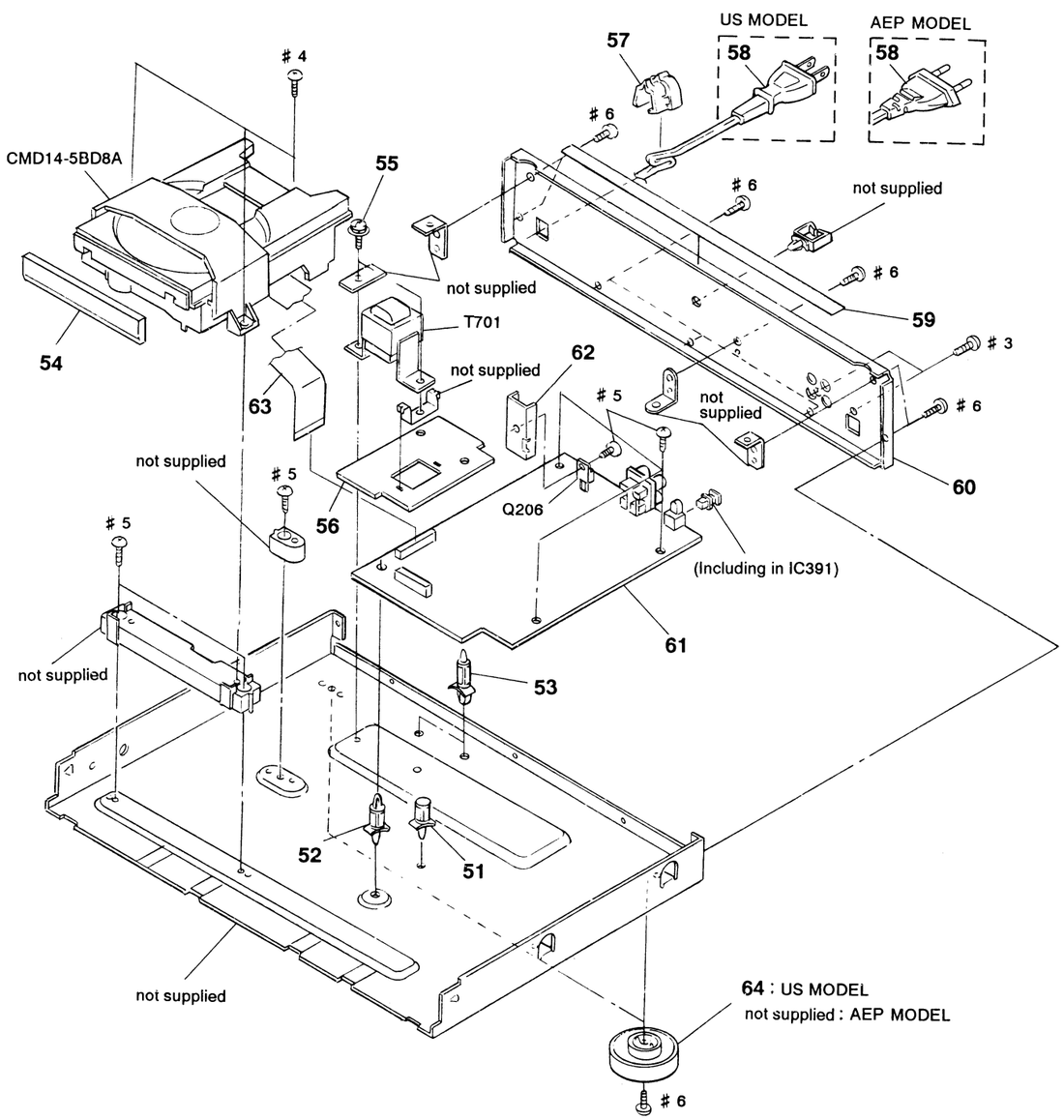
G: GERMANY

6-1. OPERATION ASSEMBLY



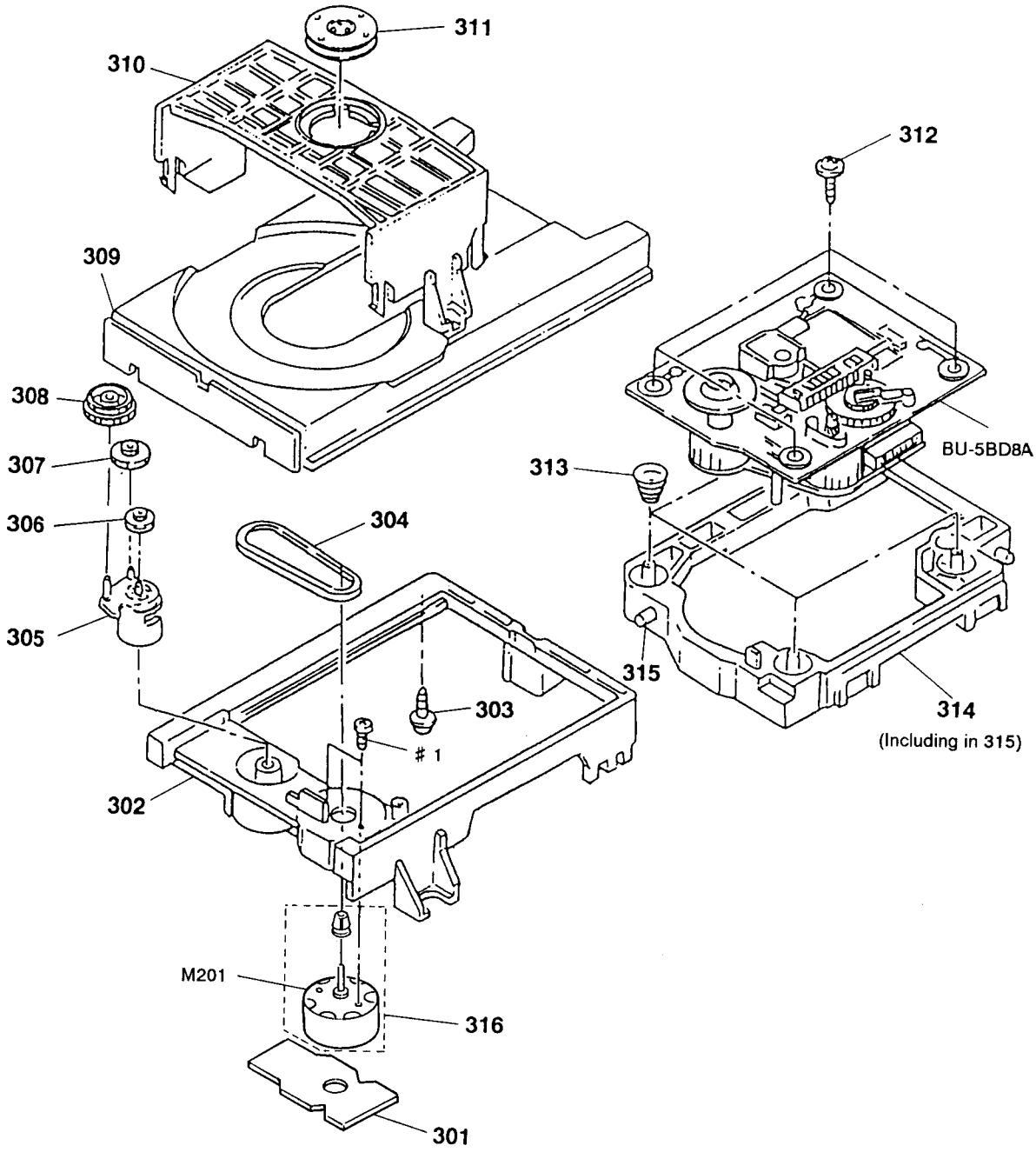
Ref. No.	Part No.	Description	Remark
1	3-703-685-21	SCREW (+BV 3X8)	
2	4-947-570-01	PANEL (FRONT) (US)	
2	4-947-570-11	PANEL (FRONT) (AEP)	
3	4-908-848-01	EMBLEM, SONY	
* 4	4-929-557-01	CUSHION (PANEL)	
5	4-947-571-01	PLATE, INDICATION	
6	X-4941-939-1	PANEL (BASE) (L) ASSY (AEP)	
6	X-4942-166-1	PANEL (BASE) (L) ASSY (US)	
* 7	4-929-561-01	CUSHION (CASE)	
* 8	4-922-943-01	DUMPER	
9	3-704-366-01	SCREW (CASE) (M3X8)	
10	4-928-025-11	ESCUTCHEON (TOP PLATE)	
11	3-721-187-01	SCREW (3X8)	
12	4-934-008-01	CASE	
13	4-922-518-11	KNOB (TIMER)	
14	4-947-034-01	BUTTON (POWER)	
15	4-951-620-01	SCREW (2.6X8), +BVTP	
* 16	A-4617-978-A	DISP BOARD, COMPLETE	
17	1-690-438-11	WIRE, FLAT TYPE (19 CORE)	
* 18	1-641-572-11	FUNCTION BOARD	
* 19	3-362-478-31	HOLDER (T), LED	
* 20	1-641-569-11	DSP VOL BOARD	
* 21	1-641-568-11	REMOTE CONTROL VOL BOARD	
* 22	1-641-573-11	H.P BOARD	
23	X-4941-938-1	BUTTON ASSY	
24	4-947-573-01	BUTTON (O/C)	
25	4-947-574-01	BUTTON (MC1)	
26	4-947-575-01	BUTTON (MC2)	
27	4-947-576-01	BUTTON (MC3)	
28	4-947-577-01	BUTTON (MC4)	
29	X-4941-940-1	PANEL (BASE) (R) ASSY (AEP)	
29	X-4942-167-1	PANEL (BASE) (R) ASSY (US)	
30	4-947-578-01	INDICATOR (MODE)	
31	4-948-469-01	SPRING, RING	
32	A-4604-901-A	KNOB (HP) ASSY	
33	4-923-836-11	CUSHION	
34	4-948-345-01	KNOB (VOL)	
FLD401	1-519-695-11	INDICATOR TUBE, FLUORESCENT	

6-2. MAIN ASSEMBLY



Ref. No.	Part No.	Description	Remark
* 51	3-349-025-41	HOLDER, PC BOARD	
* 52	4-924-098-01	HOLDER, PC BOARD	
* 53	4-943-687-11	HOLDER, PC BOARD	
54	4-947-572-01	PANEL, LOADING	
55	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
* 56	1-641-571-11	POWER TRANSFORMER BOARD	
* 57	3-703-244-00	BUSHING (2104), CORD	
⚠58	1-575-651-21	CORD, POWER (AEP)	
⚠58	1-590-836-11	CORD, POWER (US)	
* 59	4-927-653-01	SHEET (F/P)	
* 60	4-946-788-11	PANEL, BACK (US)	
* 60	4-946-788-41	PANEL, BACK (AEP)	
* 61	A-4649-336-A	MAIN BOARD, COMPLETE (AEP)	
* 61	A-4649-348-A	MAIN BOARD, COMPLETE (US)	
* 61	A-4649-351-A	MAIN BOARD, COMPLETE (G)	
* 62	4-941-237-01	HEAT SINK	
63	1-575-002-11	WIRE, FLAT TYPE (22 CORE)	
64	4-943-148-32	FOOT (F58175SW) (US)	
Q206	8-729-821-73	TRANSISTOR 2SB1274SA-RS	
⚠T701	1-449-921-11	TRANSFORMER, POWER (US)	
⚠T701	1-449-922-11	TRANSFORMER, POWER (AEP)	

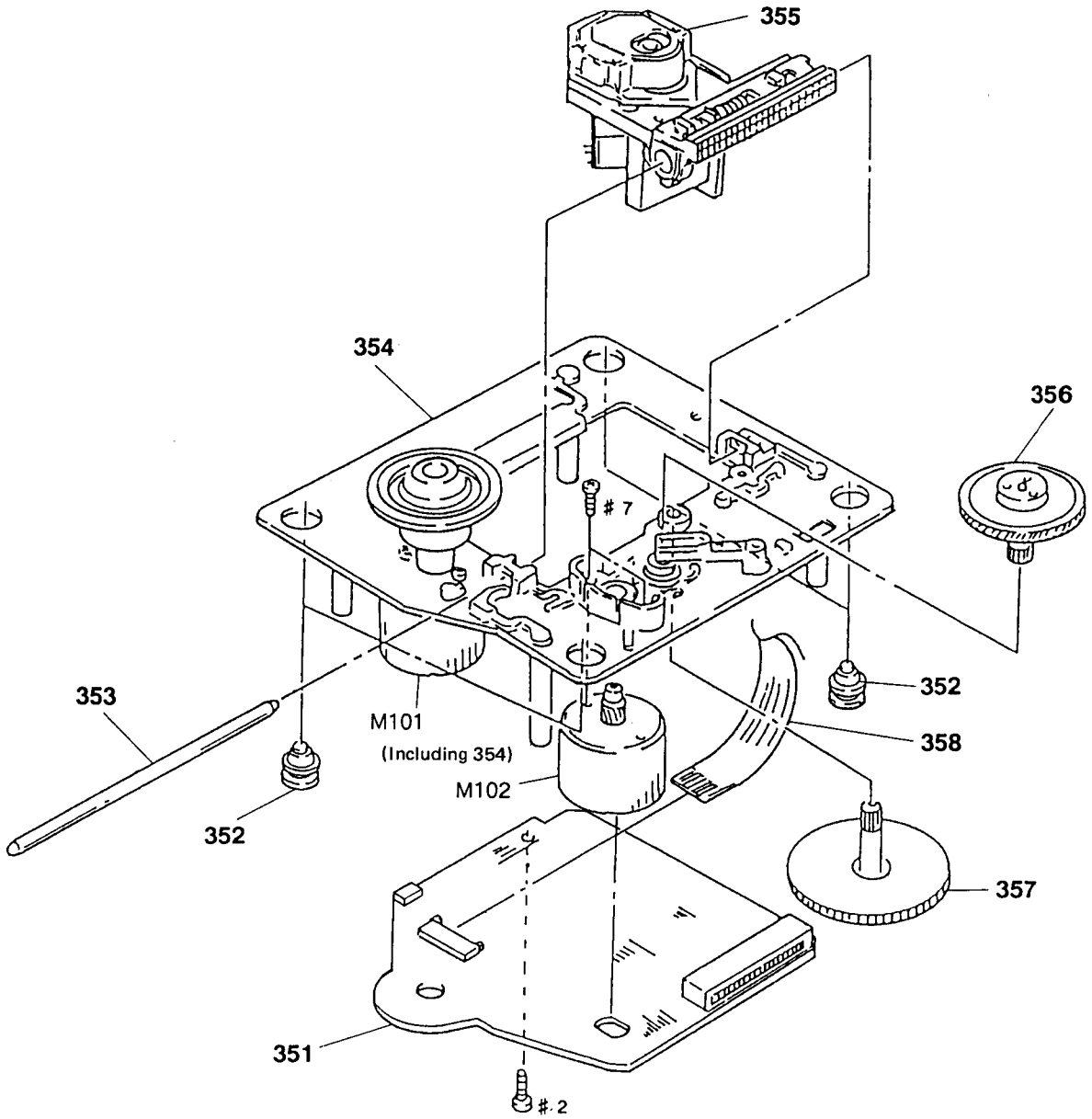
6-3. MD ASSEMBLY (CDM-5BD8A)



Ref. No.	Part No.	Description	Remark
* 301	1-632-202-11	LOADING BOARD	
302	4-933-111-01	CHASSIS (MD)	
* 303	4-917-583-21	BRACKET, YOKE	
304	4-927-649-01	BELT	
305	4-933-109-01	CAM	
306	4-927-651-01	PULLEY (S)	
307	4-927-628-01	GEAR (C)	
308	4-933-107-01	GEAR (PL)	
309	4-933-112-01	TABLE, DISK	
310	4-933-110-01	HOLDER (MG)	

Ref. No.	Part No.	Description	Remark
* 311	1-452-538-11	MAGNET	
312	4-933-134-01	SCREW (+PTPWH M2.6X6)	
313	4-948-503-01	SPRING (BU), COMPRESSION	
314	4-933-129-01	HOLDER (BU)	
315	4-933-108-01	SHAFT (CAM)	
316	A-4604-363-A	MOTOR (L) ASSY	
M201	1-541-632-11	MOTOR, DC (LOADING)	

6-4. OPTICAL PICK-UP ASSEMBLY (BU-5BD8)



Ref. No.	Part No.	Description	Remark
* 351	A-4617-977-A	BD BOARD, COMPLETE	
352	4-933-126-01	INSULATOR (A)	
353	4-917-565-01	SHAFT, SLED	
354	X-4917-523-3	BASE ASSY (OUTSERT) (Including M101)	
⚠355	8-848-144-11	PICK-UP, OPTICAL KSS-240A	
356	4-917-567-01	GEAR (M)	
357	4-917-564-01	GEAR (P), FLATNESS	
358	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
359	4-951-620-01	SCREW (2.6X8), +BVTP	
M102	X-4917-504-1	MOTOR ASSY (SLED)	

BD

SECTION 7
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA ..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF G:GERMANY
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

G: GERMANY

Ref. No.	Part No.	Description			Remark
*	A-4617-977-A	BD BOARD, COMPLETE **********			
		< CAPACITOR >			
C101	1-163-005-11	CERAMIC CHIP	470PF	10% 50V	
C102	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C103	1-163-005-11	CERAMIC CHIP	470PF	10% 50V	
C104	1-164-505-11	CERAMIC CHIP	2.2uF	16V	
C105	1-135-155-21	TANTALUM CHIP	4.7uF	10% 16V	
C106	1-164-346-11	CERAMIC CHIP	1uF	16V	
C107	1-164-505-11	CERAMIC CHIP	2.2uF	16V	
C108	1-164-346-11	CERAMIC CHIP	1uF	16V	
C112	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C151	1-163-007-11	CERAMIC CHIP	680PF	10% 50V	
C152	1-163-007-11	CERAMIC CHIP	680PF	10% 50V	
C153	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C154	1-164-336-11	CERAMIC CHIP	0.33uF	25V	
C155	1-163-007-11	CERAMIC CHIP	680PF	10% 50V	
C156	1-163-007-11	CERAMIC CHIP	680PF	10% 50V	
C157	1-163-037-11	CERAMIC CHIP	0.022uF	10% 25V	
C158	1-163-037-11	CERAMIC CHIP	0.022uF	10% 25V	
C159	1-163-023-00	CERAMIC CHIP	0.015uF	5% 50V	
C160	1-163-019-00	CERAMIC CHIP	0.0068uF	10% 50V	
C181	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
		< CONNECTOR >			
CN101	1-568-796-11	SOCKET, CONNECTOR 22P			
CN102	1-568-795-11	SOCKET, CONNECTOR 12P			
CN103	1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P			
		< IC >			
IC101	8-752-344-48	IC CXD2501Q			
IC102	8-759-071-80	IC BA6297AFP			
IC103	8-759-040-83	IC BA6287F			

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R101	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R102	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R103	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R104	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R105	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R112	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R113	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R114	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R117	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R118	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R121	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R122	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R151	1-216-070-00	METAL CHIP	7.5K	5% 1/10W	
R152	1-216-070-00	METAL CHIP	7.5K	5% 1/10W	
R153	1-216-070-00	METAL CHIP	7.5K	5% 1/10W	
R154	1-216-070-00	METAL CHIP	7.5K	5% 1/10W	
R155	1-216-070-00	METAL CHIP	7.5K	5% 1/10W	
R156	1-216-070-00	METAL CHIP	7.5K	5% 1/10W	
R157	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R158	1-216-076-00	METAL CHIP	13K	5% 1/10W	
R159	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R160	1-216-081-00	METAL CHIP	22K	5% 1/10W	
R161	1-216-093-00	METAL CHIP	68K	5% 1/10W	
R162	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R163	1-216-308-00	METAL CHIP	4.7	5% 1/10W	
R181	1-216-021-00	METAL CHIP	68	5% 1/10W	
R182	1-216-021-00	METAL CHIP	68	5% 1/10W	
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT)			

DISP DSP FUNCTION

Ref. No.	Part No.	Description				Remark
*	A-4617-978-A	DISP BOARD, COMPLETE				
		**********				
		< CAPACITOR >				
C401	1-164-159-11	CERAMIC	0.1uF			50V
C402	1-164-159-11	CERAMIC	0.1uF			50V
C403	1-164-159-11	CERAMIC	0.1uF			50V
		< CONNECTOR >				
CN401	1-568-802-11	SOCKET, CONNECTOR 19P				
* CN402	1-691-188-11	CONNECTOR, BOARD TO BOARD 18P				
		< DIODE >				
D403	8-719-018-46	DIODE	SEL3510C-CD			
D404	8-719-023-94	DIODE	SEL3910A-CD			
D405	8-719-313-69	DIODE	SEL3210S-CD			
D406	8-719-023-95	DIODE	SEL3710K-CD			
D411	8-719-987-63	DIODE	1N4148M			
D412	8-719-987-63	DIODE	1N4148M			
D413	8-719-987-63	DIODE	1N4148M			
D414	8-719-987-63	DIODE	1N4148M			
D415	8-719-987-63	DIODE	1N4148M			
D416	8-719-987-63	DIODE	1N4148M			
D417	8-719-987-63	DIODE	1N4148M			
		< INDICATOR TUBE >				
FLD401	1-519-695-11	INDICATOR TUBE, FLUORESCENT				
		< IC >				
IC401	8-759-074-74	IC	MSC62408-033GS-V1K			
IC402	8-741-100-48	IC	SBX1610-59			
		< TRANSISTOR >				
Q403	8-729-900-45	TRANSISTOR	DTC114EF			
Q404	8-729-900-45	TRANSISTOR	DTC114EF			
Q405	8-729-900-45	TRANSISTOR	DTC114EF			
Q406	8-729-900-45	TRANSISTOR	DTC114EF			
Q410	8-729-900-45	TRANSISTOR	DTC114EF			
Q411	8-729-900-45	TRANSISTOR	DTC114EF			
		< RESISTOR >				
R401	1-249-429-11	CARBON	10K	5%	1/4W	
R402	1-249-429-11	CARBON	10K	5%	1/4W	
R403	1-249-410-11	CARBON	270	5%	1/4W	
R404	1-249-413-11	CARBON	470	5%	1/4W	
R405	1-249-417-11	CARBON	1K	5%	1/4W	
R406	1-249-416-11	CARBON	820	5%	1/4W	
R409	1-247-903-00	CARBON	1M	5%	1/4W	
R410	1-249-441-11	CARBON	100K	5%	1/4W	
R411	1-249-441-11	CARBON	100K	5%	1/4W	
		< SWITCH >				
S401	1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)				
S402	1-570-157-51	SWITCH, SLIDE (TIMER)				
S403	1-554-303-21	SWITCH, TACTILE (CONTINUE)				
S404	1-554-303-21	SWITCH, TACTILE (SHUFFLE)				
S405	1-554-303-21	SWITCH, TACTILE (PROGRAM)				
S406	1-554-303-21	SWITCH, TACTILE (C. INDEX)				
S407	1-554-303-21	SWITCH, TACTILE (⏏ OPEN/CLOSE)				
		< CRYSTAL >				
X401	1-577-101-11	VIBRATOR, CERAMIC (4.19MHz)				
**********						
*	1-641-569-11	DSP VOL BOARD				
		**********				
		< VARIABLE RESISTOR >				
RV521	1-241-738-11	RES, VAR, CARBON 10K (EFFECT)				
**********						
*	1-641-572-11	FUNCTION BOARD				
		**********				
*	3-362-478-31	HOLDER (T), LED				
		< CONNECTOR >				
* CN801	1-691-187-11	CONNECTOR, BOARD TO BOARD 18P				
		< DIODE >				
D801	8-719-987-93	DIODE	MBG3371X-9.5			
D802	8-719-313-72	DIODE	SEL3810A-CD			
D803	8-719-987-91	DIODE	MMA3371X			
		< TRANSISTOR >				
Q801	8-729-900-45	TRANSISTOR	DTC114EF			
Q802	8-729-900-45	TRANSISTOR	DTC114EF			
Q803	8-729-900-45	TRANSISTOR	DTC114EF			
		< RESISTOR >				
R801	1-249-408-11	CARBON	180	5%	1/4W	
R802	1-249-415-11	CARBON	680	5%	1/4W	
R803	1-249-412-11	CARBON	390	5%	1/4W	
		< SWITCH >				
S801	1-554-303-21	SWITCH, TACTILE (DSP/1-20)				

FUNCTION H.P LOADING MAIN

Ref. No.	Part No.	Description	Remark
S802	1-554-303-21	SWITCH, TACTILE (HALL/1)	
S803	1-554-303-21	SWITCH, TACTILE (CHURCH/2)	
S804	1-554-303-21	SWITCH, TACTILE (JAZZ CLUB/3)	
S805	1-554-303-21	SWITCH, TACTILE (STADIUM/4)	
S806	1-554-303-21	SWITCH, TACTILE (DISCO/5)	
S807	1-554-303-21	SWITCH, TACTILE (FILE/RECALL)	
S808	1-554-303-21	SWITCH, TACTILE (LIVE ROOM/6)	
S809	1-554-303-21	SWITCH, TACTILE (BGM/7)	
S810	1-554-303-21	SWITCH, TACTILE (8)	
S811	1-554-303-21	SWITCH, TACTILE (9)	
S812	1-554-303-21	SWITCH, TACTILE (10)	
S813	1-554-303-21	SWITCH, TACTILE (A. SPACE/A. CUE)	
S814	1-554-303-21	SWITCH, TACTILE (11)	
S815	1-554-303-21	SWITCH, TACTILE (12)	
S816	1-554-303-21	SWITCH, TACTILE (13)	
S817	1-554-303-21	SWITCH, TACTILE (14)	
S818	1-554-303-21	SWITCH, TACTILE (15)	
S819	1-554-303-21	SWITCH, TACTILE (MUSIC SCAN)	
S820	1-554-303-21	SWITCH, TACTILE (16)	
S821	1-554-303-21	SWITCH, TACTILE (17)	
S822	1-554-303-21	SWITCH, TACTILE (18)	
S823	1-554-303-21	SWITCH, TACTILE (19)	
S824	1-554-303-21	SWITCH, TACTILE (20)	
S825	1-554-303-21	SWITCH, TACTILE (FILE)	
S826	1-554-303-21	SWITCH, TACTILE (▷▷)	
S827	1-554-303-21	SWITCH, TACTILE (LEVEL FILE)	
S828	1-554-303-21	SWITCH, TACTILE (CLEAR)	
S829	1-554-303-21	SWITCH, TACTILE (CHECK)	
S830	1-554-303-21	SWITCH, TACTILE (FLAT/>20)	
S831	1-554-303-21	SWITCH, TACTILE (ERASE)	
S832	1-554-303-21	SWITCH, TACTILE (EDIT/TIME FADE)	
S833	1-554-303-21	SWITCH, TACTILE (◁◁)	
S834	1-554-303-21	SWITCH, TACTILE (▷▷|)	
S835	1-554-303-21	SWITCH, TACTILE (|◁◁)	
S836	1-554-303-21	SWITCH, TACTILE (■)	
S837	1-554-303-21	SWITCH, TACTILE (PEAK SEARCH)	
S838	1-554-303-21	SWITCH, TACTILE (TIME MEMO)	
S839	1-554-303-21	SWITCH, TACTILE (▶)	
S840	1-554-303-21	SWITCH, TACTILE (REPEAT)	
S841	1-554-303-21	SWITCH, TACTILE (FADER)	
S842	1-554-303-21	SWITCH, TACTILE (❚❚)	

****

* 1-641-573-11 H.P BOARD
****

< CAPACITOR >

C511	1-162-294-31	CERAMIC	0.001uF	10%	50V
C512	1-162-294-31	CERAMIC	0.001uF	10%	50V

< CONNECTOR >

* CN511 1-564-705-11 PIN, CONNECTOR (SMALL TYPE) 3P

< JACK >

J511 1-568-519-41 JACK, LARGE TYPE (PHONES)

< COIL >

L511 1-410-397-21 FERRITE BEAD INDUCTOR (US)
L512 1-410-397-21 FERRITE BEAD INDUCTOR (US)
L513 1-410-397-21 FERRITE BEAD INDUCTOR (US)

****

* 1-632-202-11 LOADING BOARD
****

< CONNECTOR >

* CN301 1-564-707-11 PIN, CONNECTOR (SMALL TYPE) 5P

< SWITCH >

S271 1-572-086-11 SWITCH, LEAF (LOAD OUT)
S272 1-572-086-11 SWITCH, LEAF (LOAD IN)

****

* A-4649-336-A MAIN BOARD, COMPLETE (AEP)
* A-4649-348-A MAIN BOARD, COMPLETE (US)
****

* 4-941-237-01 HEAT SINK

< CAPACITOR >

C201	1-124-572-11	ELECT	100uF	20%	63V
C203	1-126-059-11	ELECT	10uF	20%	50V
C204	1-126-016-11	ELECT	4700uF	20%	16V
C205	1-126-016-11	ELECT	4700uF 20%	16V	(US)
C205	1-126-017-11	ELECT	6800uF 20%	16V	(AEP)
C206	1-126-059-11	ELECT	10uF	20%	50V
C207	1-126-163-11	ELECT	4.7uF	20%	50V
C208	1-126-059-11	ELECT	10uF	20%	50V
C209	1-126-013-11	ELECT	1000uF	20%	16V
C210	1-126-013-11	ELECT	1000uF	20%	16V
C211	1-124-556-11	ELECT	2200uF	20%	16V
C212	1-164-159-11	CERAMIC	0.1uF		50V
C214	1-126-024-11	ELECT	220uF	20%	16V
C215	1-125-622-11	CAP, DOUBLE LAYERS	0.1uF		5.5V
C216	1-164-159-11	CERAMIC	0.1uF		50V
C217	1-164-159-11	CERAMIC	0.1uF		50V
C218	1-126-163-11	ELECT	4.7uF	20%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C220	1-124-997-11	ELECT	470uF	20%	10V
C221	1-130-491-00	MYLAR	0.047uF	5%	50V
C301	1-126-022-11	ELECT	47uF	20%	16V
C302	1-161-494-00	CERAMIC	0.022uF		25V
C303	1-164-159-11	CERAMIC	0.1uF		50V
C304	1-126-022-11	ELECT	47uF	20%	16V
C311	1-136-161-00	FILM	0.047uF	5%	50V
C312	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C313	1-161-494-00	CERAMIC	0.022uF		25V
C314	1-162-306-11	CERAMIC	0.01uF	20%	16V
C315	1-126-300-11	ELECT	0.47uF	20%	50V
C316	1-164-159-11	CERAMIC	0.1uF		50V
C317	1-162-282-31	CERAMIC	100PF	10%	50V
C318	1-126-022-11	ELECT	47uF	20%	16V
C319	1-126-022-11	ELECT	47uF	20%	16V
C320	1-161-494-00	CERAMIC	0.022uF		25V
C321	1-164-159-11	CERAMIC	0.1uF		50V
C322	1-130-483-00	MYLAR	0.01uF	5%	50V
C341	1-162-208-31	CERAMIC	24PF	5%	50V
C343	1-136-165-00	FILM	0.1uF	5%	50V
C344	1-126-022-11	ELECT	47uF	20%	16V
C345	1-164-159-11	CERAMIC	0.1uF		50V
C346	1-124-994-11	ELECT	100uF	20%	10V
C347	1-136-165-00	FILM	0.1uF	5%	50V
C348	1-124-997-11	ELECT	470uF	20%	10V
C349	1-136-165-00	FILM	0.1uF	5%	50V
C350	1-124-994-11	ELECT	100uF	20%	10V
C351	1-126-101-11	ELECT	100uF	20%	16V
C352	1-136-165-00	FILM	0.1uF	5%	50V
C353	1-162-205-31	CERAMIC	18PF	5%	50V
C354	1-162-205-31	CERAMIC	18PF	5%	50V
C355	1-136-165-00	FILM	0.1uF	5%	50V
C356	1-124-994-11	ELECT	100uF	20%	10V
C361	1-162-281-31	CERAMIC	91PF	10%	50V
C367	1-162-281-31	CERAMIC	91PF	10%	50V
C391	1-164-159-11	CERAMIC	0.1uF		50V
C392	1-162-286-31	CERAMIC	220PF	10%	50V
C601	1-162-213-31	CERAMIC	39PF	5%	50V
C602	1-162-213-31	CERAMIC	39PF	5%	50V
C603	1-106-359-00	MYLAR	4700PF	5%	200V
C604	1-130-472-00	MYLAR	0.0012uF	5%	50V
C605	1-136-165-00	FILM	0.1uF	5%	50V
C606	1-130-467-00	MYLAR	470PF	5%	50V
C607	1-126-024-11	ELECT	220uF	20%	16V
C621	1-162-213-31	CERAMIC	39PF	5%	50V
C622	1-162-213-31	CERAMIC	39PF	5%	50V
C623	1-106-359-00	MYLAR	4700PF	5%	200V
C624	1-130-472-00	MYLAR	0.0012uF	5%	50V
C625	1-136-165-00	FILM	0.1uF	5%	50V
C626	1-130-467-00	MYLAR	470PF	5%	50V
C627	1-126-024-11	ELECT	220uF	20%	16V
C661	1-130-467-00	MYLAR	470PF	5%	50V
C663	1-126-012-11	ELECT	470uF	20%	16V
C671	1-130-467-00	MYLAR	470PF	5%	50V
C673	1-126-012-11	ELECT	470uF	20%	16V
C901	1-164-159-11	CERAMIC	0.1uF		50V
C902	1-126-022-11	ELECT	47uF	20%	16V
C903	1-164-159-11	CERAMIC	0.1uF		50V
C904	1-126-012-11	ELECT	470uF	20%	16V
C905	1-126-012-11	ELECT	470uF	20%	16V
C911	1-124-463-00	ELECT	0.1uF	20%	50V
C912	1-124-463-00	ELECT	0.1uF	20%	50V
C913	1-124-463-00	ELECT	0.1uF	20%	50V
C914	1-126-051-11	ELECT	47uF	20%	50V
C915	1-162-211-31	CERAMIC	33PF	5%	50V
C916	1-126-051-11	ELECT	47uF	20%	50V
C931	1-124-463-00	ELECT	0.1uF	20%	50V
C932	1-124-463-00	ELECT	0.1uF	20%	50V
C933	1-124-463-00	ELECT	0.1uF	20%	50V
C934	1-126-051-11	ELECT	47uF	20%	50V
C935	1-162-211-31	CERAMIC	33PF	5%	50V
C936	1-126-051-11	ELECT	47uF	20%	50V

< CONNECTOR >

* CN201	1-564-509-11	PLUG, CONNECTOR 6P	
CN301	1-506-468-11	CONNECTOR	3P, MALE
* CN302	1-568-955-11	PIN, CONNECTOR 6P	
CN303	1-568-802-11	SOCKET, CONNECTOR 19P	
* CN304	1-568-822-11	SOCKET, CONNECTOR 22P	
* CN661	1-564-711-11	PIN, CONNECTOR (SMALL TYPE) 9P	

< DIODE >

D201	8-719-200-82	DIODE	11ES2
D202	8-719-200-82	DIODE	11ES2
D203	8-719-200-82	DIODE	11ES2
D204	8-719-200-82	DIODE	11ES2
D205	8-719-200-82	DIODE	11ES2
D206	8-719-987-63	DIODE	1N4148M
D207	8-719-109-85	DIODE	RD5.1ES-B2
D208	8-719-934-31	DIODE	HZS36-3L
D209	8-719-110-03	DIODE	RD7.5ES-B2
D210	8-719-987-63	DIODE	1N4148M
D211	8-719-110-08	DIODE	RD8.2ES-B2
D601	8-719-987-63	DIODE	1N4148M
D621	8-719-987-63	DIODE	1N4148M
D651	8-719-987-63	DIODE	1N4148M

Ref. No.	Part No.	Description		Remark
		< IC >		
IC201	8-759-630-21	IC	M5290P-16	
IC202	8-759-945-58	IC	RC4558P	
IC301	8-759-062-61	IC	M38063M6-168FP	
IC302	8-759-512-81	IC	LH5160N-10L	
IC303	8-759-962-08	IC	BA6208	
IC331	8-752-337-26	IC	CXD2500AQ	
IC332	8-759-232-07	IC	TC74HC04AP	
IC341	8-752-342-65	IC	CXD2560M	
IC342	8-752-349-02	IC	CXD2561AM-1	
IC391	8-749-921-20	IC	T-1550	
IC601	8-759-982-03	IC	RC5532D-D	
IC602	8-759-982-03	IC	RC5532D-D	
IC661	8-759-981-85	IC	RC4556D	
IC901	8-752-341-99	IC	CXD2701Q	
IC902	8-759-508-41	IC	MS51464-10NS	
IC903	8-759-982-03	IC	RC5532D-D	
		< JACK >		
* J601	1-569-443-11	JACK, PIN 4P (LINE OUT FIXED/VARIABLE)		
		< COIL >		
L331	1-408-403-00	INDUCTOR	3.3uH	
L332	1-408-403-00	INDUCTOR	3.3uH	
L341	1-408-403-00	INDUCTOR	3.3uH	
L342	1-408-403-00	INDUCTOR	3.3uH (US)	
		< TRANSISTOR >		
Q202	8-729-900-80	TRANSISTOR	DTC114ES	
Q203	8-729-900-61	TRANSISTOR	DTA114ES	
Q204	8-729-140-96	TRANSISTOR	2SD774-34	
Q205	8-729-900-80	TRANSISTOR	DTC114ES	
Q206	8-729-821-73	TRANSISTOR	2SB1274SA-RS	
Q207	8-729-140-96	TRANSISTOR	2SD774-34	
Q208	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q209	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q210	8-729-821-73	TRANSISTOR	2SB1274SA-RS	
Q215	8-729-281-52	TRANSISTOR	2SC1815-Y	
Q301	8-729-900-80	TRANSISTOR	DTC114ES	
Q391	8-729-119-76	TRANSISTOR	2SA1175-HFE	
Q601	8-729-141-30	TRANSISTOR	2SC3623A-LK	
Q602	8-729-141-30	TRANSISTOR	2SC3623A-LK	
Q603	8-729-201-05	TRANSISTOR	2SC2878-B	
Q604	8-729-900-61	TRANSISTOR	DTA114ES	
Q621	8-729-141-30	TRANSISTOR	2SC3623A-LK	
Q622	8-729-141-30	TRANSISTOR	2SC3623A-LK	
Q623	8-729-201-05	TRANSISTOR	2SC2878-B	
Q624	8-729-900-61	TRANSISTOR	DTA114ES	

Ref. No.	Part No.	Description		Remark
Q651	8-729-900-61	TRANSISTOR	DTA114ES	
Q652	8-729-900-80	TRANSISTOR	DTC114ES	
Q901	8-729-900-63	TRANSISTOR	DTA124ES	
Q902	8-729-900-63	TRANSISTOR	DTA124ES	
Q903	8-729-900-63	TRANSISTOR	DTA124ES	
Q911	8-729-201-05	TRANSISTOR	2SC2878-B	
Q912	8-729-201-05	TRANSISTOR	2SC2878-B	
Q913	8-729-201-05	TRANSISTOR	2SC2878-B	
Q931	8-729-201-05	TRANSISTOR	2SC2878-B	
Q932	8-729-201-05	TRANSISTOR	2SC2878-B	
Q933	8-729-201-05	TRANSISTOR	2SC2878-B	
		< RESISTOR >		
R201	1-249-425-11	CARBON	4.7K 5% 1/4W	
R202	1-249-425-11	CARBON	4.7K 5% 1/4W	
R203	1-249-424-11	CARBON	3.9K 5% 1/4W	
⚠R204	1-212-869-00	FUSIBLE	33 5% 1/4W	F
R205	1-249-435-11	CARBON	33K 5% 1/4W	
R206	1-249-413-11	CARBON	470 5% 1/4W	
R207	1-249-429-11	CARBON	10K 5% 1/4W	
R208	1-249-425-11	CARBON	4.7K 5% 1/4W	
R210	1-249-438-11	CARBON	56K 5% 1/4W	
R211	1-249-429-11	CARBON	10K 5% 1/4W	
R213	1-249-417-11	CARBON	1K 5% 1/4W	
R214	1-249-417-11	CARBON	1K 5% 1/4W	
R215	1-249-429-11	CARBON	10K 5% 1/4W	
R216	1-249-410-11	CARBON	270 5% 1/4W	
R217	1-249-429-11	CARBON	10K 5% 1/4W	
R301	1-249-417-11	CARBON	1K 5% 1/4W	
R302	1-249-417-11	CARBON	1K 5% 1/4W	
R303	1-249-417-11	CARBON	1K 5% 1/4W	
R304	1-249-433-11	CARBON	22K 5% 1/4W	
R305	1-249-433-11	CARBON	22K 5% 1/4W	
R306	1-249-425-11	CARBON	4.7K 5% 1/4W	
R307	1-249-425-11	CARBON	4.7K 5% 1/4W	
R308	1-249-429-11	CARBON	10K 5% 1/4W	
R309	1-249-429-11	CARBON	10K 5% 1/4W	
R310	1-249-429-11	CARBON	10K 5% 1/4W	
R311	1-249-429-11	CARBON	10K 5% 1/4W	
R312	1-249-429-11	CARBON	10K 5% 1/4W	
R313	1-249-429-11	CARBON	10K 5% 1/4W	
R314	1-249-429-11	CARBON	10K 5% 1/4W	
R315	1-249-429-11	CARBON	10K 5% 1/4W	
R316	1-249-429-11	CARBON	10K 5% 1/4W	
R317	1-249-429-11	CARBON	10K 5% 1/4W	
R318	1-249-429-11	CARBON	10K 5% 1/4W	
R319	1-247-903-00	CARBON	1M 5% 1/4W	
R320	1-249-417-11	CARBON	1K 5% 1/4W	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

MAIN

Ref. No.	Part No.	Description			Remark
R321	1-249-417-11	CARBON	1K	5%	1/4W
R322	1-249-417-11	CARBON	1K	5%	1/4W
R323	1-249-417-11	CARBON	1K	5%	1/4W
R324	1-249-417-11	CARBON	1K	5%	1/4W
R325	1-249-417-11	CARBON	1K	5%	1/4W
R326	1-249-429-11	CARBON	10K	5%	1/4W
R327	1-249-441-11	CARBON	100K	5%	1/4W
R328	1-249-423-11	CARBON	3.3K	5%	1/4W
R329	1-249-423-11	CARBON	3.3K	5%	1/4W
R330	1-249-429-11	CARBON	10K	5%	1/4W
R331	1-247-887-00	CARBON	220K	5%	1/4W
R332	1-249-417-11	CARBON	1K	5%	1/4W
R333	1-249-417-11	CARBON	1K	5%	1/4W
R334	1-249-425-11	CARBON	4.7K	5%	1/4W
R335	1-249-425-11	CARBON	4.7K	5%	1/4W
R336	1-249-425-11	CARBON	4.7K	5%	1/4W
R337	1-249-429-11	CARBON	10K	5%	1/4W
R338	1-249-411-11	CARBON	330	5%	1/4W
R339	1-247-903-00	CARBON	1M	5%	1/4W
R340	1-249-409-11	CARBON	220	5%	1/4W
R341	1-249-417-11	CARBON	1K	5%	1/4W
R342	1-249-417-11	CARBON	1K	5%	1/4W
R343	1-249-417-11	CARBON	1K	5%	1/4W
R344	1-249-417-11	CARBON	1K	5%	1/4W
R345	1-249-417-11	CARBON	1K	5%	1/4W
R346	1-249-416-11	CARBON	820	5%	1/4W
R347	1-249-417-11	CARBON	1K	5%	1/4W
R348	1-249-405-11	CARBON	100	5%	1/4W
R349	1-249-401-11	CARBON	47	5%	1/4W (US)
R351	1-215-459-00	METAL	39K	1%	1/6W
R352	1-215-459-00	METAL	39K	1%	1/6W
R353	1-215-459-00	METAL	39K	1%	1/6W
R354	1-215-459-00	METAL	39K	1%	1/6W
R355	1-215-459-00	METAL	39K	1%	1/6W
R356	1-215-459-00	METAL	39K	1%	1/6W
R357	1-215-459-00	METAL	39K	1%	1/6W
R358	1-215-459-00	METAL	39K	1%	1/6W
R359	1-247-903-00	CARBON	1M	5%	1/4W
R360	1-249-416-11	CARBON	820	5%	1/4W
R361	1-249-429-11	CARBON	10K	5%	1/4W
R362	1-249-429-11	CARBON	10K	5%	1/4W
R363	1-249-429-11	CARBON	10K	5%	1/4W
R364	1-249-429-11	CARBON	10K	5%	1/4W
R371	1-249-433-11	CARBON	22K	5%	1/4W
R372	1-249-433-11	CARBON	22K	5%	1/4W
R391	1-249-411-11	CARBON	330	5%	1/4W
R392	1-249-405-11	CARBON	100	5%	1/4W
R393	1-249-406-11	CARBON	120	5%	1/4W
R394	1-249-435-11	CARBON	33K	5%	1/4W
R601	1-215-451-00	METAL	18K	1%	1/6W
R602	1-215-451-00	METAL	18K	1%	1/6W
R603	1-215-463-00	METAL	56K	1%	1/6W
R604	1-215-463-00	METAL	56K	1%	1/6W
R605	1-249-419-11	CARBON	1.5K	5%	1/4W
R606	1-249-419-11	CARBON	1.5K	5%	1/4W
R607	1-249-409-11	CARBON	220	5%	1/4W
R608	1-249-409-11	CARBON	220	5%	1/4W
R609	1-249-393-11	CARBON	10	5%	1/4W
R610	1-249-425-11	CARBON	4.7K	5%	1/4W
R611	1-249-425-11	CARBON	4.7K	5%	1/4W
R612	1-249-436-11	CARBON	39K	5%	1/4W
R613	1-249-428-11	CARBON	8.2K	5%	1/4W
R615	1-249-411-11	CARBON	330	5%	1/4W
R621	1-215-451-00	METAL	18K	1%	1/6W
R622	1-215-451-00	METAL	18K	1%	1/6W
R623	1-215-463-00	METAL	56K	1%	1/6W
R624	1-215-463-00	METAL	56K	1%	1/6W
R625	1-249-419-11	CARBON	1.5K	5%	1/4W
R626	1-249-419-11	CARBON	1.5K	5%	1/4W
R627	1-249-409-11	CARBON	220	5%	1/4W
R628	1-249-409-11	CARBON	220	5%	1/4W
R629	1-249-393-11	CARBON	10	5%	1/4W
R630	1-249-425-11	CARBON	4.7K	5%	1/4W
R631	1-249-425-11	CARBON	4.7K	5%	1/4W
R632	1-249-436-11	CARBON	39K	5%	1/4W
R633	1-249-428-11	CARBON	8.2K	5%	1/4W
R635	1-249-411-11	CARBON	330	5%	1/4W
R651	1-249-441-11	CARBON	100K	5%	1/4W
R652	1-249-429-11	CARBON	10K	5%	1/4W
R662	1-249-414-11	CARBON	560	5%	1/4W
R663	1-249-435-11	CARBON	33K	5%	1/4W
R664	1-249-435-11	CARBON	33K	5%	1/4W
R665	1-249-425-11	CARBON	4.7K	5%	1/4W
R666	1-249-435-11	CARBON	33K	5%	1/4W
R667	1-249-402-11	CARBON	56	5%	1/4W
R672	1-249-414-11	CARBON	560	5%	1/4W
R673	1-249-435-11	CARBON	33K	5%	1/4W
R674	1-249-435-11	CARBON	33K	5%	1/4W
R675	1-249-425-11	CARBON	4.7K	5%	1/4W
R676	1-249-435-11	CARBON	33K	5%	1/4W
R677	1-249-402-11	CARBON	56	5%	1/4W
R901	1-249-417-11	CARBON	1K	5%	1/4W
R902	1-249-417-11	CARBON	1K	5%	1/4W
R903	1-249-417-11	CARBON	1K	5%	1/4W
R904	1-249-441-11	CARBON	100K	5%	1/4W
R905	1-249-441-11	CARBON	100K	5%	1/4W
R906	1-249-441-11	CARBON	100K	5%	1/4W
R908	1-249-405-11	CARBON	100	5%	1/4W

MAIN | POWER TRANSFORMER | REMOTE CONTROL VOL

Ref. No.	Part No.	Description			Remark
R909	1-249-405-11	CARBON	100	5% 1/4W	
R911	1-249-425-11	CARBON	4.7K	5% 1/4W	
R912	1-249-425-11	CARBON	4.7K	5% 1/4W	
R913	1-249-425-11	CARBON	4.7K	5% 1/4W	
R914	1-249-421-11	CARBON	2.2K	5% 1/4W	
R915	1-247-836-11	CARBON	1.6K	5% 1/4W	
R916	1-247-832-11	CARBON	1.1K	5% 1/4W	
R917	1-249-422-11	CARBON	2.7K	5% 1/4W	
R918	1-247-828-11	CARBON	750	5% 1/4W	
R919	1-249-410-11	CARBON	270	5% 1/4W	
R920	1-249-441-11	CARBON	100K	5% 1/4W	
R921	1-249-419-11	CARBON	1.5K	5% 1/4W	
R923	1-247-891-00	CARBON	330K	5% 1/4W	
R931	1-249-425-11	CARBON	4.7K	5% 1/4W	
R932	1-249-425-11	CARBON	4.7K	5% 1/4W	
R933	1-249-425-11	CARBON	4.7K	5% 1/4W	
R934	1-249-421-11	CARBON	2.2K	5% 1/4W	
R935	1-247-836-11	CARBON	1.6K	5% 1/4W	
R936	1-247-832-11	CARBON	1.1K	5% 1/4W	
R937	1-249-422-11	CARBON	2.7K	5% 1/4W	
R938	1-247-828-11	CARBON	750	5% 1/4W	
R939	1-249-410-11	CARBON	270	5% 1/4W	
R940	1-249-441-11	CARBON	100K	5% 1/4W	
R941	1-249-419-11	CARBON	1.5K	5% 1/4W	
R943	1-247-891-00	CARBON	330K	5% 1/4W	
R951	1-249-417-11	CARBON	1K	5% 1/4W	
R952	1-249-417-11	CARBON	1K	5% 1/4W	
R953	1-249-417-11	CARBON	1K	5% 1/4W	
		< CRYSTAL >			
X351	1-579-314-11	VIBRATOR, CRYSTAL (22.5MHz)			
X355	1-579-233-11	VIBRATOR, CERAMIC (5MHz)			
**********					
*	1-641-571-11	POWER TRANSFORMER BOARD			
		**********			
		< CAPACITOR >			
C701	1-164-159-11	CERAMIC	0.1uF	50V	
C702	1-164-159-11	CERAMIC	0.1uF	50V (US)	
C703	1-164-159-11	CERAMIC	0.1uF	50V (US)	
C704	1-164-159-11	CERAMIC	0.1uF	50V (US)	
		< CONNECTOR >			
* CN701	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P			
* CN702	1-564-509-11	PLUG, CONNECTOR 6P			
**********					

Ref. No.	Part No.	Description	Remark
*	1-641-568-11	REMOTE CONTROL VOL BOARD	
		**********	
		< CAPACITOR >	
C501	1-164-159-11	CERAMIC 0.1uF	50V
		< CONNECTOR >	
* CN501	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	
* CN502	1-568-955-11	PIN, CONNECTOR 6P	
		< VARIABLE RESISTOR >	
RV501	1-238-776-11	RES, VAR, CARBON 10KX3 (LINE OUT PHONE LEVEL)	
**********			
		MISCELLANEOUS	
		**********	
17	1-690-438-11	WIRE, FLAT TYPE (19 CORE)	
⚠58	1-575-651-21	CORD, POWER (AEP)	
⚠58	1-590-836-11	CORD, POWER (US)	
63	1-575-002-11	WIRE, FLAT TYPE (22 CORE)	
* 311	1-452-538-11	MAGNET	
⚠355	8-848-144-11	PICK-UP, OPTICAL KSS-240A	
358	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M201	1-541-632-11	MOTOR, DC (LOADING)	
⚠T701	1-449-921-11	TRANSFORMER, POWER (US)	
⚠T701	1-449-922-11	TRANSFORMER, POWER (AEP)	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-465-873-11	REMOTE COMMANDER (RM-D997)	
	1-558-271-11	CORD, CONNECTION	
	3-707-584-01	COVER, BATTERY	
	3-754-170-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP)	
	3-754-170-21	MANUAL, INSTRUCTION (ENGLISH) (US)	
	3-754-170-41	MANUAL, INSTRUCTION (GERMAN, ITALIAN, DUTCH, SWEDISH) (AEP)	
*	4-934-088-01	CUSHION	
*	4-941-548-01	LABEL, CLASS 1 (AEP)	
*	4-948-310-11	INDIVIDUAL CARTON	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		HARDWARE LIST	
		************	
#1	7-621-775-10	SCREW +B 2.6X4	
#2	7-621-255-15	SCREW +P 2X3	
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#4	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#5	7-682-548-04	SCREW +BVTT 3X8 (S)	
#6	7-682-548-09	SCREW +BVTT 3X8 (S)	

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Audio Group

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